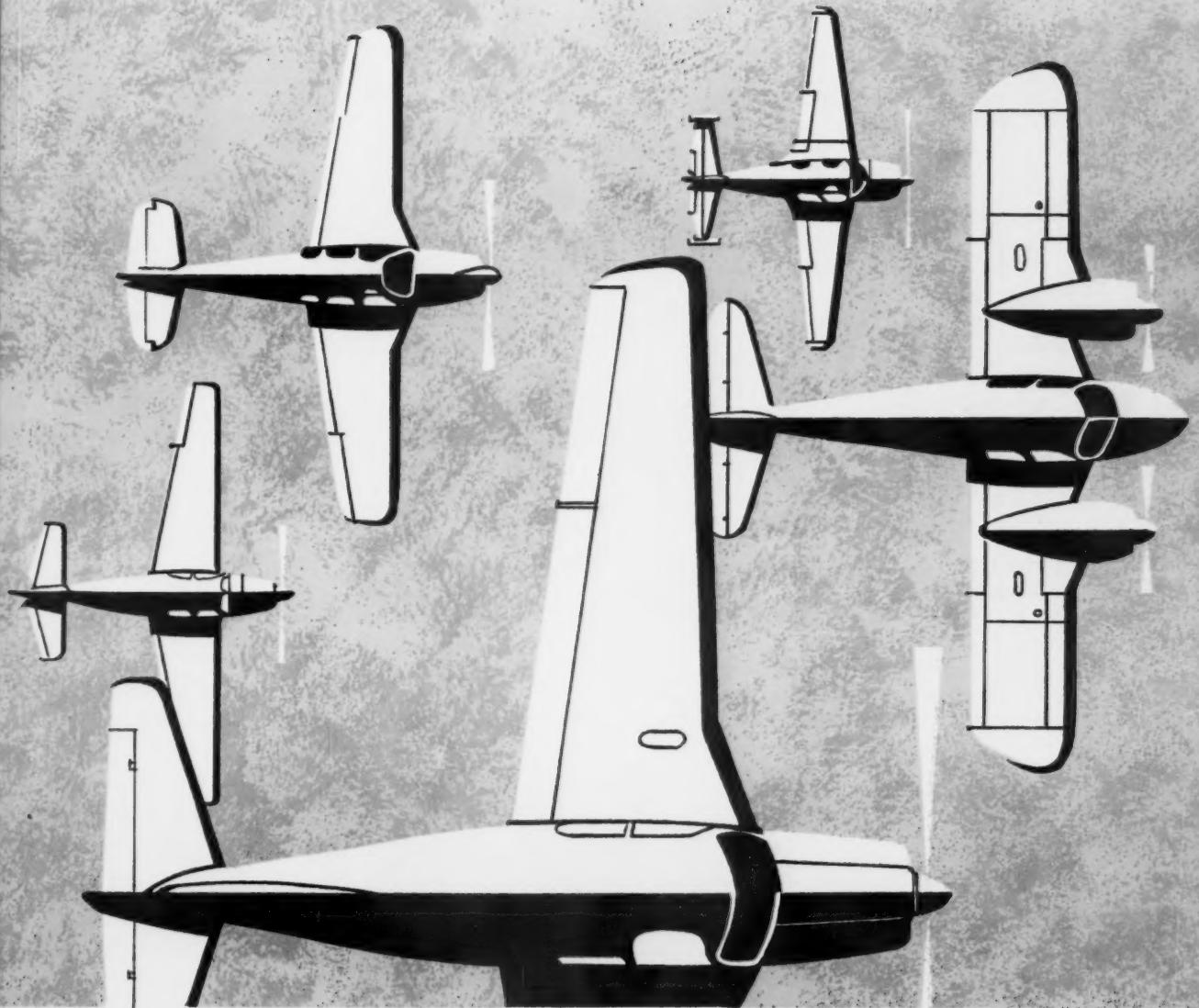


# DISTRIBUTION AGE

A CHILTON  PUBLICATION

JULY 1960



**New Phenomenon . . . the Executive Pilot** (See Page 31)



# MOTO-TRUC

**For Cost Cutting  
HANDLING SYSTEMS**

- Whether your handling system calls for a single truck or a whole fleet, you can count on MOTO-TRUC'S to give you maximum production at minimum cost!

Here's why: First MOTO-TRUC's cost less initially than comparable models built by competitive manufacturers. And, their simplicity plus their easy accessibility assures lowest maintenance cost.

Every MOTO-TRUC model is compactly designed to require minimum aisle space. Yet, they are tough and dependable — built to do more work, day in and day out.

There are more than 200 standard MOTO-TRUC walkie and small rider models for horizontal transport — for hauling trailers and for high stacking operations — There is sure to be one to fit your handling needs.

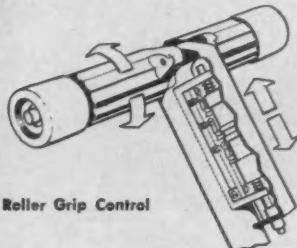


Get Complete Information. Write for these useful Moto-Truc Catalogs — 56W on Walkies; 56R on Ride-A-Man Models.

**The MOTO-TRUC Co.**

1956 East 59th Street • Cleveland 3, Ohio

#### **ROLLER GRIP CONTROL—another MOTO-TRUC design exclusive**



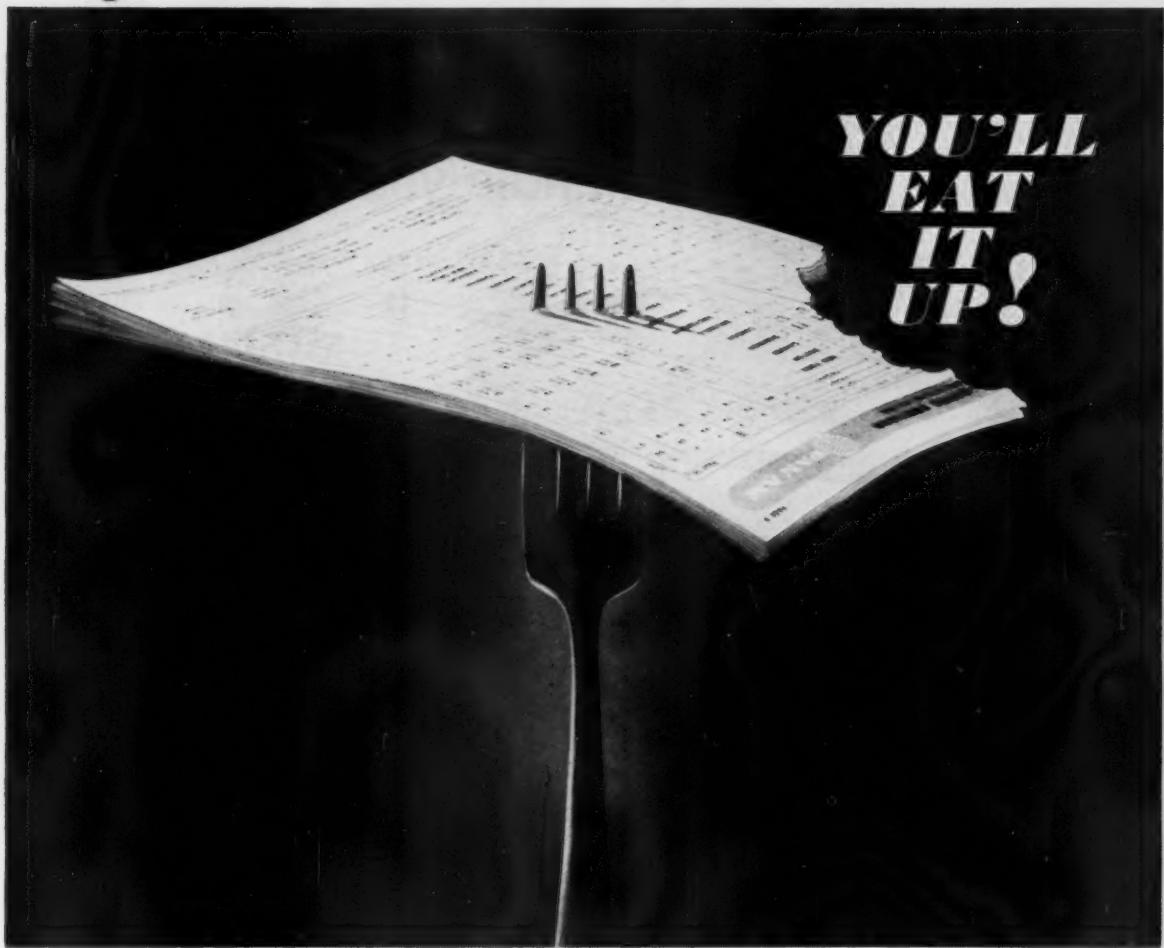
This patented control center, used on all MOTO-TRUC walkie models, and many small rider models, as well, is the ultimate in safety and convenience.

Its simplicity assures outstanding dependability and long service life. The operator simply twists the control handle to vary speed and control direction. Push buttons in the ends of the handle control lift and lowering.

This control is just one more example of MOTO-TRUC design quality that means more efficient industrial truck handling.

**The MOTO-TRUC Company**  
Cleveland, Ohio

Power-packed Pan Am Cargo schedule gives you more speed, more flights, more door-to-door service than any other overseas air cargo carrier... *and at new low rates, too!*



Get a taste of this service. You'll like it! For time is just one thing you save when you order shipments by Pan Am Clipper.\*

You save paper work, red tape, expensive crating charges, warehousing charges, inventory costs. And as for price—in addition to Pan Am's traditionally low rates to Latin America, transatlantic rates have just been cut up to 45%, transpacific rates were recently cut as much as 53%. Today in more and more cases it costs less to ship by Pan Am than the total for surface transportation.

No wonder more American companies now look to Pan Am as their *regular* means of overseas supply. Pan Am offers more: MORE PLANES (including more Jets) • MORE SPACE (new DC-7F's carry up to 15 tons of cargo) • MORE SPEED • MORE FLIGHTS • MORE ARRIVAL AND DEPARTURE POINTS IN THE U.S. • MORE SERVICE.

Your company deserves these advantages on *both* inbound and outbound shipments. Call your cargo agent, freight forwarder or Pan Am office. Get your product *aboard today—abroad tomorrow!*

*via the WORLD'S MOST EXPERIENCED AIRLINE*



\*Trade Mark, Reg. U. S. Pat. Off.

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PACIFIC  
RAILROAD

. . . provides a variety of

# GONDOLAS

to better handle your products



#### SELF CLEARING

for commodities unloaded through the bottom



#### SOLID BOTTOM

for products requiring solid floor shipping

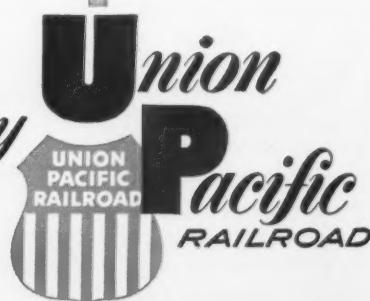


#### COVERED GONDOLA

for protecting products from the weather

Whenever you ship  
in or through the West

*...be specific, say*



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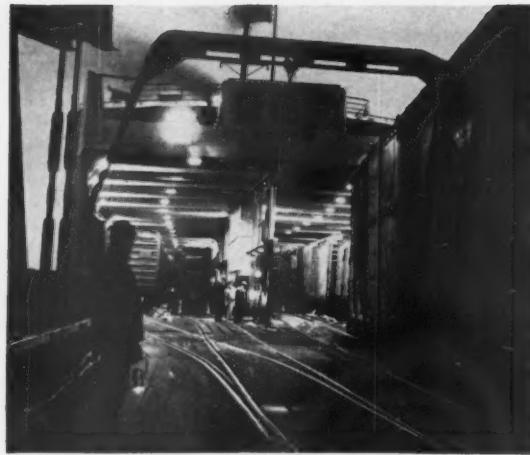
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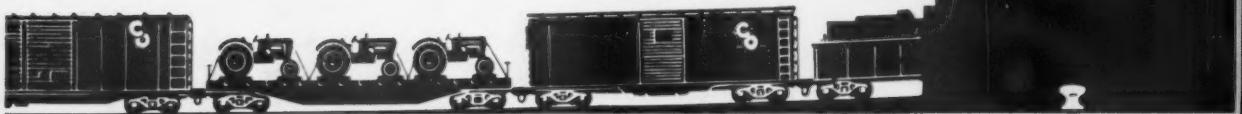
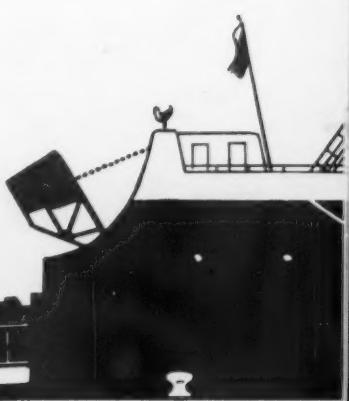
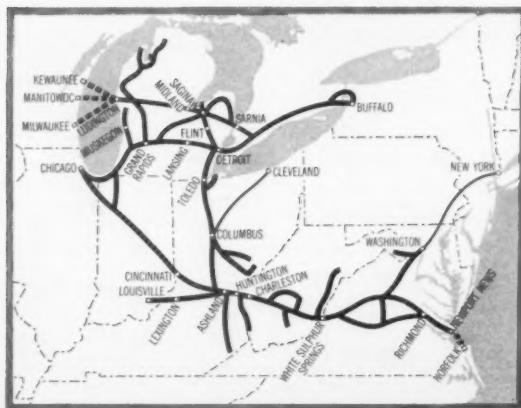
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**Year-round daily schedules** are maintained by C&O Train-ferries, key link in the fast, dependable east-west freight service route.



**Chessie's trains come first** but there's also room for automobiles and their passengers. Motorists choose C&O's comfortable ships for fun and a welcome change from highway travel.



# utstandability

**Chessie's Trainferries give you  
a year-round east-west shortcut**

C&O's fleet of seven modern Trainferries, as big and as fast as many ocean vessels, ply Lake Michigan every day of the year on regular schedules, bridging East and Northwest. Within a few hours they provide speedy interchange between Ludington, Michigan and the Wisconsin gateways of Milwaukee, Manitowoc and Kewaunee. And CLIC, Chessie's fast, accurate electronic car reporting keeps an eye on your shipment on the Trainferry Route or anywhere on the C&O System.

Freight-car-carrying ships are just one of the many outstanding facilities of the Chesapeake and Ohio Railway. Ship C&O and benefit from them all.



**Chesapeake and Ohio  
Railway**

TERMINAL TOWER, CLEVELAND 1, OHIO

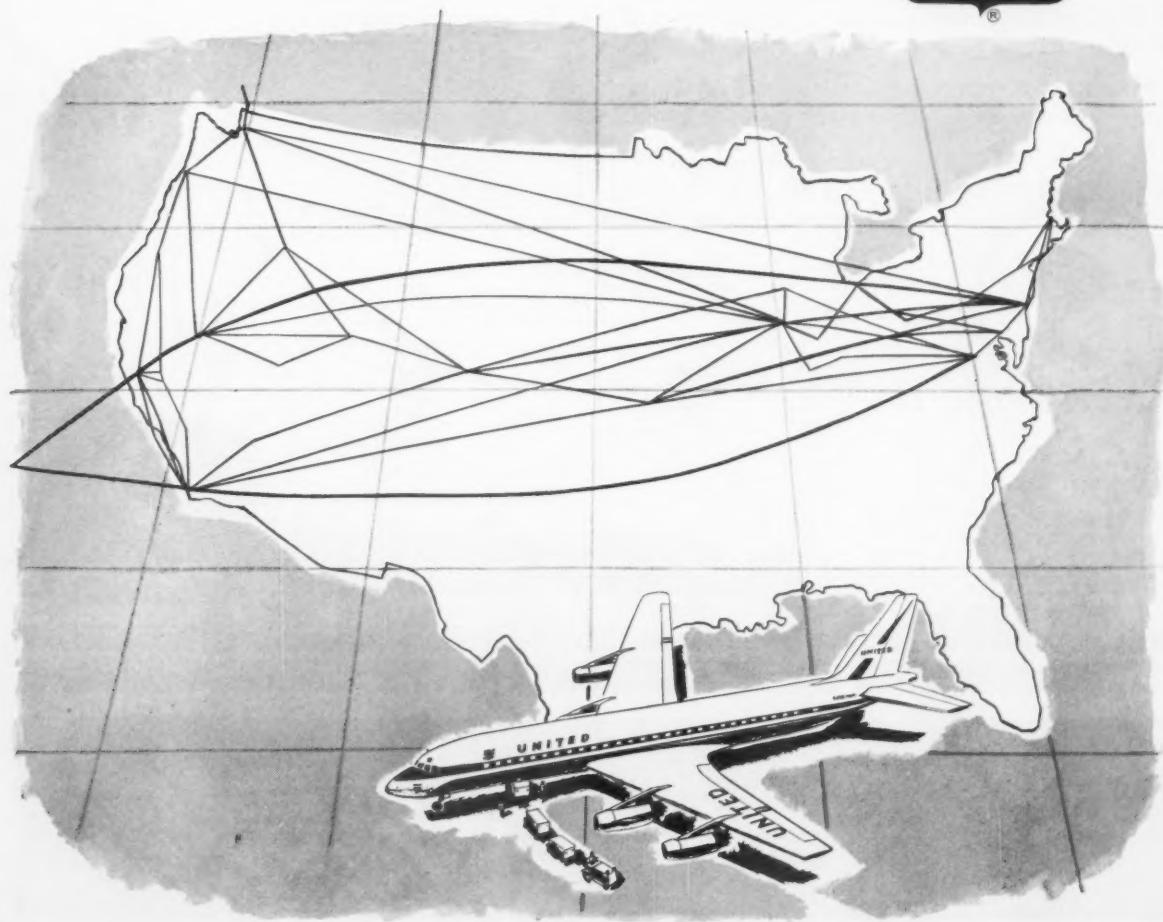
*Outstandability in Transportation*



## **COAST-TO-COAST, BORDER-TO-BORDER VIA DEPENDABLE UNITED AIR FREIGHT**

A single phone call to United Air Lines gives you fast, dependable Air Freight throughout the U.S.A. or most anywhere in the world—on a single air bill, with one-carrier responsibility. United's unique Reserved Air Freight enables you to reserve freight space as you would a passenger seat . . . on the flight most convenient for you. And this service is avail-

able on a fleet of fast Cargoliners and all United Mainliners, including 600-mph jets. You have a wide selection of schedules and a choice of door-to-door or airport-to-airport service. Call your local United Air Lines Sales Office or write to United Air Lines, Cargo Sales Division, 36 S. Wabash Avenue, Chicago 3, Illinois.



# CHUTING THE

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## AMA Announces Distribution Management Seminar

The success of AMA's Distribution Management Conferences has spurred organization of the First Orientation Seminar in this new field of management.

Conducted by the American Management Association, this will be the first workshop on the organization and management of the physical distribution function. It will be held at the AMA Academy at Saranac Lake, New York, the week of July 25.

The Seminar will open for registration at 8:30 a.m. on Monday. At 9:30, George M. Perry, general manager, Distribution-Sales Division of General Foods Corp., will present an introduction to physical distribution management—an overall view of its organization and practice.

The afternoon will be devoted to specific procedures on how distribution management can help eliminate the grey area of divided responsibility between manufacturing and marketing. The speaker and discussion leader will be Philip F. Cannon, vice president, Barrington Associates, New York City.

—DA—

## Presents Brief for Containers

A brief was presented to the General Freight Traffic Committee of the Eastern Railroads by a representative of the Grace Line's Traffic Department. The brief contained certain proposals designed to provide exporters and importers with facilities for door-to-door movements of containers via railroads. One proposal was that the railroads allow empty containers to be carried free on flatcars when the trip accomplishes the inward or outward leg of a prospective export or import shipment.

—DA—

## AST&T Hears of Need to Enlist Intelligent, High Caliber Youth

The lack of high caliber youths entering the transportation industry was discussed in detail at the recent Conference of the California Chapter, American Society of Traffic and Transportation.

Dr. E. Howard Brooks, executive secretary of the Committee of University Policy, Stanford University, told the transportation men that their industry was not attracting young men from the top half of the graduating classes of scholastic institutions.

## TMs Organize Aviation Council, Seek Improved Airline Service

A move to improve airline facilities at the Metropolitan Oakland, Calif., International Airport was made recently when area traffic managers formed the Three County Industrial Traffic Managers Aviation Council.

The Council, newly-incorporated, has as its chairman, H. W. Raver, traffic manager, Kaiser Industries. W. R. Walker, regional traffic manager, Montgomery Ward and Co., is vice chairman. The organization excludes anyone engaged in or associated with any group which provides transportation for hire.

(Please Turn Page)

## AMHS Swells Fund



The Los Angeles Chapter of the American Material Handling Society has presented a gift of \$2500 toward the purchase of an analog computer for the University of Southern California. Shown receiving the donation in behalf of the University is Homer H. Grant (left). President W. B. Semco of the Los Angeles AMHS chapter made the presentation.

## Chuting the News . . .

(Continued from Preceding Page)

### Bush Explains Benefits of New Export Insurance, Cites Need for Adequate Financing for Exporters

The present unfavorable balance of trade will be maintained unless U. S. exporters can receive sufficient financing and insurance coverage to place themselves in better competitive alignment with foreign factors.

This was the substance of remarks made in an address by James S. Bush, a director of the Export-Import Bank of the United States, before a gathering of exporters. Bush explained the Export-Import institution's new program of short-term political risk insurance and expanded medium-term financing. More than 125 U. S. commercial banks are cooperating in the program as agents.

The program protects exporters for a 180-day period in most nations not a part of the Sino-Soviet bloc for a variety of risks such as civil war or rebellion, cancellation of an import license, or inconvertibility of funds. Bush feels that the U. S. is slipping back in the realm of medium-term financing but that his bank's new program can counteract the situation. The program runs for from 181 days to seven years to provide comprehensive insurance.

The Export-Import Bank is accepting the credit judgment of commercial banks in order to expedite applications.

—DA—

### ICC Intangibles Amortization Requirement Ends in 20th Year

After 20 years, the ICC has ended its amortization of intangibles requirement in purchase applications. The ICC had held that as a condition to approval of acquisition of motor carrier intangible property, the cost of such property be amortized.

The National Accounting and Finance Council of the American Trucking Associations hailed the end of the practice as the successful conclusion of a five-year project. An immediate effect of the notice was to permit Consolidated Freight Lines, Inc., Delaware, to carry the value of several sets of operating rights owned by Consolidated as intangible property not to be amortized.

—DA—

### CBFA Elects Officers

New officers were elected at the Annual Meeting of the Customs Brokers and Forwarders Association of America, Inc. They include Walter J. Mercer, Hudson Shipping Co., Inc., president; Anthony V. Biegen, Caldwell and Co., Inc.; Samuel Shapiro, Samuel Shapiro and Co., Inc.; George Dwyer, Los Angeles Customs and Freight Brokers Association, Inc.; Herman F. Weber, Texas Ocean Freight Forwarders Association; Peter Tower, Customhouse Brokers Association-Northern U. S. Border, all vice presidents. Also William I. Freedman, Freedman and Slater, Inc., secretary; Gilbert M. Colombo, Behring Shipping Co., treasurer.

—DA—

### Railroads Start Work Rule Check

The nation's railroads have asked the heads of five train-operating unions to name their negotiating committees so a time can be set for negotiations to eliminate outmoded work rules. More than 200,000 operating employees, about one out of every four railroad workers, will be involved in the negotiations.



### Milligan Elected CSTL Head At Group's Annual Meeting

The Chain Store Traffic League re-elected A. G. Milligan president at its Annual Meeting.

Principal mail order, food, variety, drug, department, and auto supply stores were represented at the meeting. Milligan is traffic manager, Sperry and Hutchinson Co., New York. Through the joint recommendation of its Legislative and Parcel Post Committees, the League supported restoration of the former limits of 100 united inches and 70 lb for a parcel post package or to compromise and accept Senator Monroney's proposal of 100 united inches and 50 lb.

It agreed definitely to oppose the postmaster general's recommendation for a maximum length restriction of 34 in. Other officers of the League were re-elected with the exception of the secretary-treasurer. W. F. Nizynski, traffic manager, W. T. Grant Co., New York, was elected to this office.

—DA—

### TTMA Set For July 10 Meeting

The 12th Annual Summer Meeting of the Truck Trailer Manufacturers Association will take place at the Homestead, Hot Springs, Va., July 10-13. It will feature a thorough discussion on demountable trailer van bodies.



**AIR CARGO HIGHLIGHTS**—(Far left) A cargo agreement providing coordinated shipping services for non-airport points via air freight and surface express is signed by J. E. Moore (left) vice president-traffic for United Air Lines and William B. Johnson, president of Railway Express. In another development, Eastern started scheduled freighter service for business days, between New York and Atlanta, Ga. Pallet-loaded cargo (above left) is shown being anchored to reinforced floor and tie-down system of Flying Freighter. When the recent tidal wave hit Hilo, Hawaii, reefer containers of supplies (right) were flown in from the mainland

## ATA Foresees Strife If FLSA Overtime Provisions Are Met

The American Trucking Associations, Inc., represented by James F. Fort, warned a House Subcommittee on Labor of the industrial strife which could occur if Congress requires all trucking employees be paid according to overtime provisions in the Fair Labor Standards Act.

It was noted that all employees of the railroads are exempted from the overtime provisions of the FLSA. Also recognizing the strength of the employees' unions, it was doubted that any additional strength from the FLSA would be necessary. "It is obvious," Fort said, "that where the labor agreements do not require overtime pay after 40 hours, the union has recognized the impossibility or impracticability of insisting upon it.

"It is equally obvious that the unions have demanded and obtained other considerations for those they represent to more than offset any return available through statutory overtime."

—DA—

*A record total in North Atlantic cargo traffic was established by scheduled airlines during 1959, cargo increased 45 per cent to a record high of 80,202,078 lb.*

## News Briefs

**The Pennsylvania Railroad** took the wraps off a super-service car locating project and a new means of assuring on-time delivery of rush shipments—twin bureaus designed to step up PRR service.

Plastics developed by Koppers Co., Inc., and Borg-Warner Corp. are playing key roles in the construction of the new insulated refrigerator car doors now being installed on the cars of Pacific Fruit Express Co. New plastic door improves insulation, results in savings of 400 to 500 pounds in car-door weight.

The Public Service Commission has granted operating rights to **United Parcel Service, Inc.**, New York, to institute a statewide parcel delivery service for industrial and commercial firms. The company plans to erect a \$4,000,000 distribution center in New York City this spring to implement the operation.

**Rock Island Lines** purchased 550 new box cars, manufactured by ACF Industries, Inc., at a cost of over \$5,000,000. Three hundred of the new cars are 40 ft 6 in. long and 250 of them are 50 ft 6 in. long. A number of the cars will be equipped with DF loading equipment.

**Trans World Airlines and Railway Express Agency** signed a new agreement for coordinated air freight-surface express services to and from non-airport cities.

**American Airlines** began a new Airfreighter service from Newark Airport to Detroit and Dallas. The DC-7 Airfreighter will leave Newark each weekday at 10:55 pm, arriving in Detroit at 12:18 am and in Dallas at 6:43 am.

**Alaska Airlines** is the first Alaska carrier to have its rates included in the Air Traffic Conference tariff pub-

lications. The airline will become a full participating member in the ATC.

A proposal was made by the Board of directors of the **Chesapeake and Ohio Railroad Co.** to offer an exchange of shares of its common stock to all holders of **Baltimore and Ohio** preferred and common stock in merger proceedings between the two roads.

**B. G. Metzger**, general manager, Sturd-Bilt Material Handling Division, Union Asbestos and Rubber Co., Chicago, has asked storage rack manufacturers to follow design standards set up by American Iron and Steel Institute.

A new publication has just been released by the **Maritime Administration, U. S. Department of Commerce**. "Domestic Oceanborne and Great Lakes Commerce of the United States 1955-1958" shows individual port-to-port tonnages transported in domestic trade.

**United Air Lines** has started the first DC-7A Cargoliner service. Each of six DC-7A cargoliners, being converted from DC-7 passenger aircraft to all-cargo carriers, can carry up to 32,500 lb of air freight, mail, and express at speeds of up to 365 miles an hour.

**Railway Express Agency** will spend \$7,000,000 for 1462 new trucks, tractors and semi-trailer units to be put into service throughout the nation beginning early this summer.

**The Ryder System, Inc.** has acquired all-steel cabooses with streamlined bay windows, foam rubber cushions, and gas heaters from the **Morrison-International Corporation**.

The **Middlewest Shipper Motor Carrier Conference** held its 27th Regular Meeting in Denver, 200 members and guests were present.

**Winning Line-up**

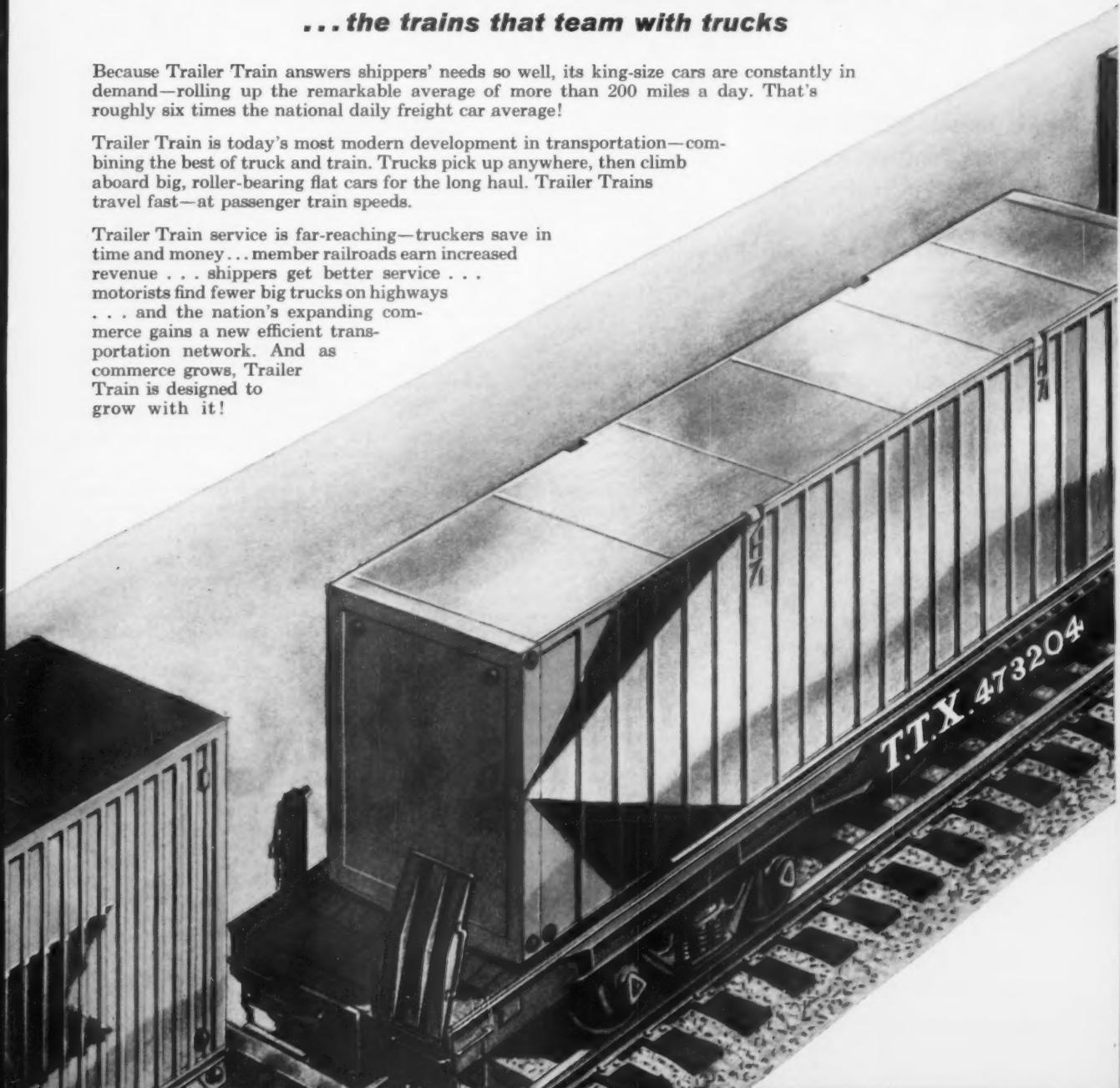
# **TRAILER TRAIN PIGGYBACK**

***...the trains that team with trucks***

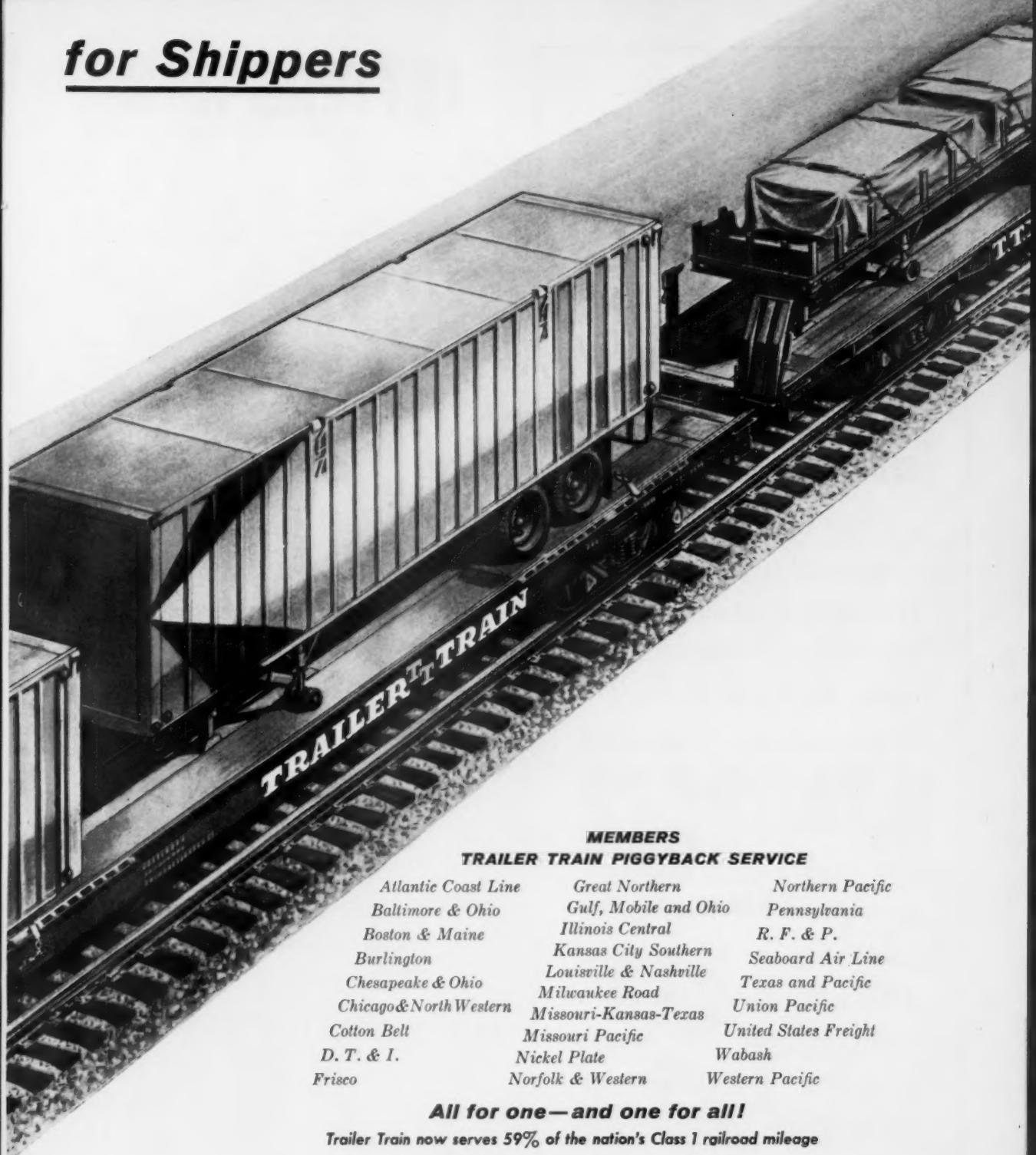
Because Trailer Train answers shippers' needs so well, its king-size cars are constantly in demand—rolling up the remarkable average of more than 200 miles a day. That's roughly six times the national daily freight car average!

Trailer Train is today's most modern development in transportation—combining the best of truck and train. Trucks pick up anywhere, then climb aboard big, roller-bearing flat cars for the long haul. Trailer Trains travel fast—at passenger train speeds.

Trailer Train service is far-reaching—truckers save in time and money . . . member railroads earn increased revenue . . . shippers get better service . . . motorists find fewer big trucks on highways . . . and the nation's expanding commerce gains a new efficient transportation network. And as commerce grows, Trailer Train is designed to grow with it!



**for Shippers**



**MEMBERS**

**TRAILER TRAIN PIGGYBACK SERVICE**

Atlantic Coast Line	Great Northern	Northern Pacific
Baltimore & Ohio	Gulf, Mobile and Ohio	Pennsylvania
Boston & Maine	Illinois Central	R. F. & P.
Burlington	Kansas City Southern	Seaboard Air Line
Chesapeake & Ohio	Louisville & Nashville	Texas and Pacific
Chicago & North Western	Milwaukee Road	Union Pacific
Cotton Belt	Missouri-Kansas-Texas	United States Freight
D. T. & I.	Missouri Pacific	Wabash
Frisco	Nickel Plate	Western Pacific
	Norfolk & Western	

**All for one—and one for all!**

Trailer Train now serves 59% of the nation's Class 1 railroad mileage



6 Penn Center Plaza • Philadelphia 3, Pa.



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...a big, beautiful factor in  
Portland Harbor's success!  
Hats off to the heavyweight  
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come the Pacific Coast dry  
cargo tonnage leader for  
the third consecutive year!  
Portland Public Docks, un-  
der centralized manage-  
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leadership in all cargoes.  
That's Portland Harbor, a  
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your cargo and knows how  
to serve it!



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Eastern Representative: Buckley & Co., 170 Broadway, New York 38, N. Y.

## LETTERS TO THE EDITOR

### Weapon Acceptance in War on Damage

To The Editor:

In regards to your April article on Dunnage — Top Weapon in the War on Damage; it was interesting and informative. For some time now we, the shippers, have been exposed to the merits of rubber and/or inflatable dunnage. The merits are justified.

However, we are puzzled as to why the AAR has not accepted his type dunnage by publishing this acceptance in their pamphlets on "Rules Regulating the Safe Loading of Freight Cars." Several rail bureau tariffs have published provisions for the free transportation of inflatable dunnage.

Jack H. Dick  
Manager of Traffic

Radio Corporation of America,  
Electron Tube Division,  
Harrison, N. J.

*At present there has been no request by the rail carriers to publish a pamphlet and, further, all of the pros and cons in relation to dunnage application and loading are not completely understood by the manufacturer or the carriers. Based on the field research we have carried out with shipments of canned foods and food products in glass, the food industry has not accepted the dunnage as being entirely applicable in their movements. Therefore, we hesitate to establish a procedure which would still be subject to change as more data and experience on its use is required.*

*If you have data on the application of pneumatic dunnage and a performance record, we would be extremely pleased to have this information to help solidify the value as well as the proper application.*

E. J. Kraska,  
Canned Goods Specialist  
Association of American Railroads,  
Operating-Transportation Division,  
Freight Loss and Damage Prevention Section,  
Chicago 5, Ill.

### Canned Goods Shipments

To The Editor:

Our business is food processing and our sales and distribution has been concentrated in the central states. In planning an expansion program, we are wondering if any experience data is available on the shipment of canned foods in the 48 states. For example, can you tell us how other canners ship their products by type of transport and by geographical area?

E. S. L.  
Assistant Production Manager  
Chicago

*All studies we have seen along this line indicate that the majority of canned goods are shipped by rail and for-hire truck. However, some private trucking is in use, particularly where raw materials can be picked up for a return load. Before considering private carriage, be sure to check with the common carriers, especially if your return load consists of seasonal perishables.*

*We also refer you to a U. S. Department of Commerce survey in this field. A 24-page booklet entitled "Transportation and Distribution of Canned Foods," is available from the Bureau of Census (Washington 25, D. C.) for 25 cents.—The Editor.*

# TRANSPORTATION IS OUR BUSINESS!

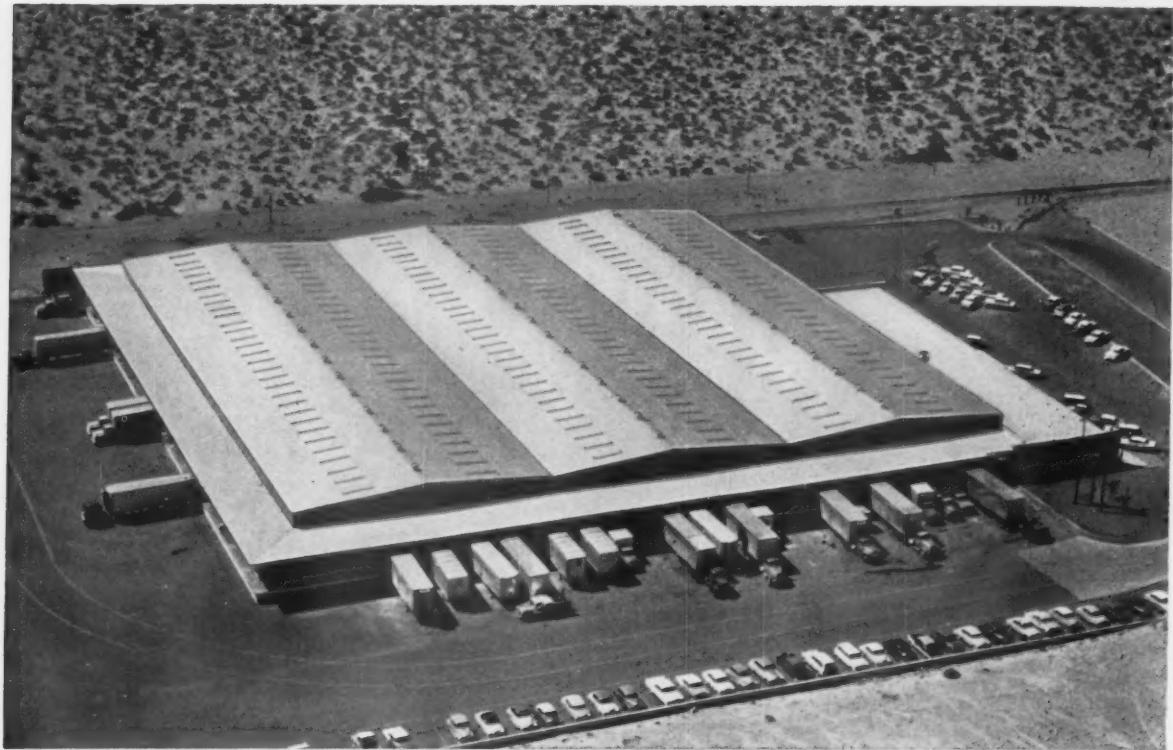
Seaboard serves shippers to and from the thriving Southeast with thoroughly modern facilities and the care taking supervision of interested, experienced personnel.

## SEABOARD

AIR LINE  
**RAILROAD**



THE ROUTE OF COURTEOUS SERVICE



**the hardest-working warehouse you can buy...**

a  
**BUTLER**  
building

When you build a Butler warehouse, you get more than just a building . . . it's a completely flexible distribution center. For example, this handsome, substantial looking building recently completed in El Paso, Texas, for Tri-State Wholesale Associated Grocers, Inc., contains storage sections for many types of merchandise . . . frozen, refrigerated and non-refrigerated. Three open sides offer easy loading and unloading at virtually any point from trailers, trucks or trains.

The key to this distribution flexibility is Butler's rigid frame, clear-span construction. Post-free, truss-free bays up to 120 feet wide let you use every inch of floor space . . . provide unobstructed storage space up to the roof. Freedom to maneuver materials handling equipment simplifies movement of merchandise. Load-bearing rigid frames provide sides that are open, solid banks of overhead doors, or curtain walls in materials of your choice, including Butlerib and Monopanl . . . the two finest wall systems for pre-engineered buildings, available in durable, sparkling Butler-Tone colors. And now . . . only with Butler pre-engineered buildings . . . you can have a guaranteed aluminum roof over your head, so superior that a full 20-year roof guarantee is optional at nominal cost.

For full details on Butler warehouses — no matter how large or small — call your Butler Builder. Ask him about Butler financing, too. He's listed in the Yellow Pages under "Buildings" or "Steel Buildings" . . . or write direct.



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Manufacturers of Metal Buildings • Plastic Panels • Equipment for Farming, Transportation, Bulk Handling, Outdoor Advertising • Contract Manufacturing  
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OPERATIONS REPORT



## Behind the man behind the wheel...

Good motor freight service requires more than good trucks—more than good drivers. It takes the right kind of organization.

Whether your commodity moves LTL, truckload or bulk—short-haul or long—the CF organization is designed with you in mind. Its people are not only trained to do *their* jobs, they think in terms of *your*

job. They respond quickly and efficiently to the needs of individual customers.

Flexibility and the desire to serve are characteristic of the Consolidated Freightways system. They add up to more and better service for you.

*Terminals and offices in 200 principal cities  
CF INFORMATION CENTER, Box 32, Chicago 50*

**CONSOLIDATED FREIGHTWAYS**



TRANSPORTATION WITH IMAGINATION



# WASHINGTON

# DA

By Neil R. Regeimbal, *Chilton Washington News Bureau*

**ASK POWER TRUCK CURB**—U. S. makers of power trucks have asked the Commerce Department to help hold government purchases of foreign-made equipment to a minimum. Purchase of foreign equipment adversely affects the industry and its potential wartime capacity, they claim. Makers of fork-lift trucks, wheeled warehouse tractors, straddle trucks and similar equipment as members of the Industrial Power Truck Manufacturers Advisory Committee made the request to the Department's Business and Defense Services Administration.

**HIGHWAY BUILDING SPURTS**—Traffic is now rolling over more than one-fifth of the 41,000-mile interstate highway system. Of the 8855 miles now in use, some 3500 meet needs expected for traffic in 1957, as required by the 1956 Highway Act. Some 3100 miles will have to be improved to meet this requirement. Another 4350 miles is under construction and preliminary engineering or right-of-way acquisition is underway for 10,500 miles, the Bureau of Public Roads reports.

**FOREIGN TRADE BOOST**—Distribution men may be handling more foreign goods and more U. S. goods for export in the years ahead. The U. S. and 35 other nations will meet at Geneva, Switzerland, in September to negotiate lower international trade barriers. U. S. tariff negotiators have published a list of some 2000 categories of products on which they are considering offering lower tariffs in exchange for tariff cuts.

**BAN BROKER CUTS**—Brokers are prohibited under the anti-discrimination laws from cutting their commissions in order to give lower prices to buyers. The U. S. Supreme Court has upheld the FTC contention that a seller's broker who cuts his commission to give a lower price to one customer violates the Robinson-Patman Act prohibition against price discrimination. Courts earlier had ruled that a buyer's broker is also prohibited from similar activities.

**CLARIFY EXCISE TAX**—The Internal Revenue Service, attempting to keep pace with changing business practices, has clarified application of the truck excise tax in three circumstances. It says that hydraulic waste container lifting units are subject to the tax as truck parts whether attached or sold separately. The tax also applies to truck bodies installed on a chassis and leased to an operator. But the parts used to repair truck bodies damaged in transit are not subject to the tax.

**EXEMPT CARGO CONTAINERS**—Cargo containers, even when equipped with clearance lights for movement on truck beds, are not subject to the federal excise tax on truck trailers and bodies. The Internal Revenue Service in a new ruling (Rev. Rul. 60-185) says that while containers may sometimes serve as truck bodies, they are not designed primarily for highway use.

**UPHOLD FORWARDER VOLUME RATES**—The ICC has affirmed a previous decision upholding freight forwarder "volume" commodity rail rates. Basis of the contested order was primarily the absence of any limitation in the transportation laws on the weight of shipments forwarders may handle. This clears the way for forwarders to use rail piggy-back service under Plan III.

**STORAGE FIGHT CONTINUES**—The controversy over government contracts with private warehouses for surplus grain storage continues. Spokesmen for grain warehousemen charge that recent cuts in rates the government pays for storage are "arbitrary and unjustified" and may drive many warehouses out of business. They also charge that a proposal forcing the government to use its own warehouses when costs are lower would be a "giant step toward nationalization" of the industry.

**PRESS HIGHWAY RESEARCH**—The federal government should begin immediately an extensive highway research program costing an estimated \$34 million over the next four or five years, a scientific group recommends. The group, a special committee of the Highway Research Board of the National Academy of Sciences, says such a program is necessary because the American economy is "utterly dependent" on its highway system.

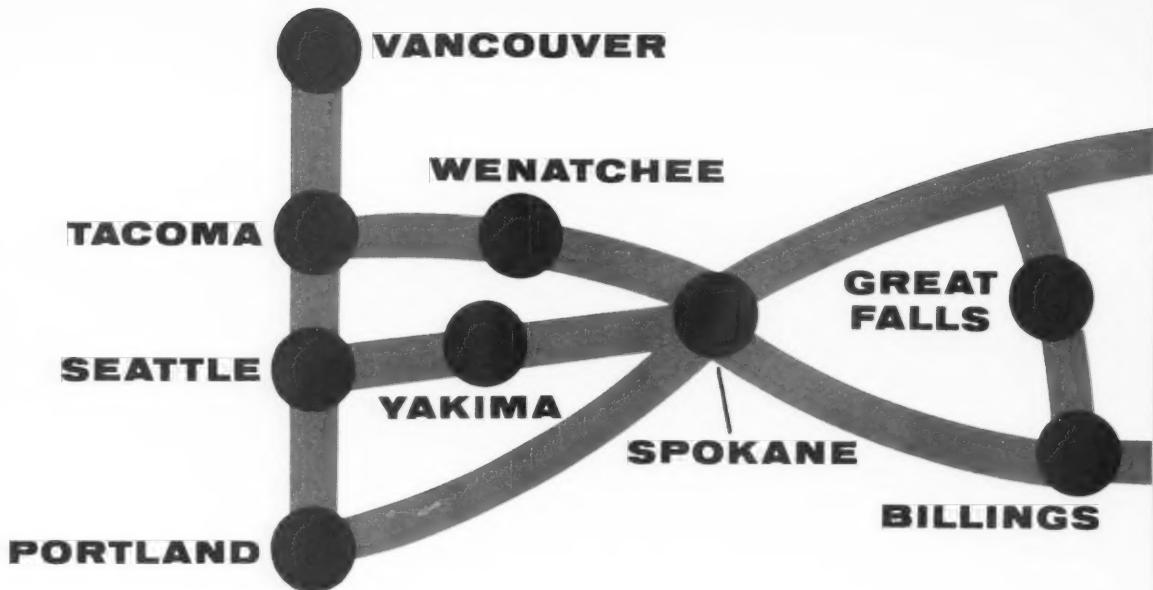
**EFFICIENCY GUIDE**—A new report by the U. S. Agriculture Department describes methods of measuring the efficiency of wholesale grocery warehouses. The report describes ways to measure efficiency of warehouse space use, rate of filing orders, number of errors, and amount of goods damaged in handling. It also discusses methods of computing possible savings from addition of materials-handling equipment. Copies of the report, "Measures of Operating Efficiency in Wholesale Food Warehouses" (Marketing Research Report No. 399), are available from the Department's office of information, Washington 25, D. C.



# Northwest from Chicago

TO ST. PAUL, MINNEAPOLIS  
SPOKANE, PORTLAND, SEATTLE  
and Western Canada...

*Route your shipments*  
**via Burlington**



***Now, more than ever,  
your best routing  
Northwest is***

**VIA**

This is the direct route...fast, efficient, dependable...linking the Pacific Northwest with Chicago and the East.

Look at the map. See how the Burlington connects Chicago with the Great Northern and Northern Pacific at St. Paul-Minneapolis. Note the rail connections available to you at Chicago. And see how the Burlington, working with major carriers of the Northwest, can speed your shipments Northwest from Chicago...or East from Seattle, Portland, Spokane, and the vast region which these railroads serve.

This is truly modern transportation...with unsurpassed schedules, connections, and facilities. For your next shipment to, from, or through this region, get your Burlington Traffic Representative's counsel and assistance. You'll discover that your best routing is VIA BURLINGTON!

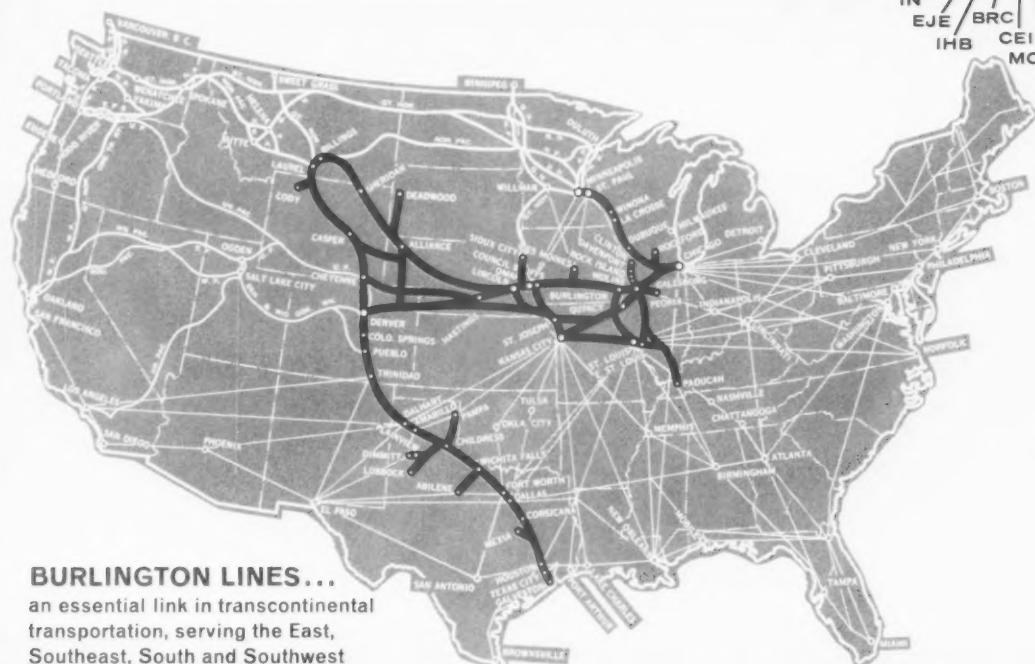
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an essential link in transcontinental transportation, serving the East, Southeast, South and Southwest through 22 principal gateways and more than 200 interchange points

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## *Second to None...*



between  
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SPOKANE—  
PORTLAND—  
SEATTLE—  
and WESTERN CANADA

- Carefully coordinated schedules and efficient handling at connections give you fast, dependable freight service between Chicago and the Pacific Northwest.

*You can count on service like this:*

Between Chicago and	Delivery
SPOKANE.....	4th morning
TACOMA.....	5th morning
SEATTLE.....	5th morning
PORTLAND.....	5th morning
VANCOUVER, B.C.....	6th morning

*Corresponding schedules to and from  
intermediate points*

**BURLINGTON LINES**

*Everywhere West*

Chicago, Burlington & Quincy Railroad

Colorado and Southern Railway

Fort Worth and Denver Railway

Burlington  
Route

## Traffic—

**Lloyd F. Baldwin**—appointed traffic manager, Harris Standard Paint Co., Tampa, Fla.

**Col. Jack N. Stovall**—new director of transportation, Air Materiel Command, Wright-Patterson Air Force Base, Ohio.

**A. Thomas Kois**—appointed general traffic manager, Chris-Craft Corp., Pompano Beach, Fla.



**James V. DeMattei**—named division manager of materials with responsibilities for warehousing, shipping, inventory control, Hudson Wire Co., Ossining, N. Y.

**Rex N. Miller**—promoted to western traffic manager, Reynolds Metals Co., Los Angeles, Calif.

**Bernard Ponessa**—new general traffic manager, Phelps Dodge Corp., New York.

**W. W. Ivie**—promoted to supervisor of traffic, Georgia Power Co.

**William E. Hertwig**—appointed traffic manager, Blue Bell, Inc., New York.

**Mrs. Adele Konefal**—promoted to traffic manager, Frank H. Fleer Corp., Philadelphia.

**William J. Held**—named manager of warehouse operations and traffic control, General Trading Co., St. Paul, Minn.

## Transportation—Highway

**James M. Kilkenny**—appointed operations manager, Baltimore Transfer Co.'s Jersey City terminal.

**W. V. Brown, Jr.**—named manager of newly-created Air Freight Department at Ryder Truck Lines.

**Wesley M. Coon**—appointed manager, Philadelphia terminal, Spector Freight System, Inc.; **Arthur Hoelzer**—New England regional manager.

**Marvin D. Edelman**—promoted to manager, Los Angeles terminal, Lifschultz Fast Freight; **Anthony J. Baldini**—manager, Bloomfield, N. J., terminal.

**Samuel T. Genet**—to head Florida-Texas Freight, Inc., Port Newark, N. J., freight-forwarding company which plans to concentrate on fishback shipments.

**Raymond M. Lyons**—director-industrial relations, Fruehauf Trailer Co., Detroit, Mich.

**Charles S. Hale**—elected vice president, North Atlantic Region, White Motor Co.; **Edward S. Hoke**—vice president, Eastern Region; **Robert F. Sharpe**—vice president, Southern Region.

**C. B. Taufer**—appointed vice president-terminal operations; **A. H. Schaefer, Jr.**—vice president-traffic; **F. E. Devlin, D. C. Klein**—assistant

# Men in the News

vice presidents-terminal operations; and **M. T. Hopper, G. L. Lyons**—directors of sales at Pacific Intermountain Express, Oakland, Calif.

**James Gaston**—named Lufkin, Texas, terminal manager, East Texas Motor Freight.

**William F. Shields**—new Union, N. J., terminal manager, Motor Carco, Inc.

**Richard Eicher**—named manager, Seattle terminal, Denver-Chicago Trucking Co., Inc.; **Francis E. Mullady, Jr.**—manager, Buffalo, N. Y., terminal.

## —Rail

**Albert H. Kohn**—elected president, Association of Railroad Advertising Managers. He is general advertising manager of the Southern Pacific Co.

**Regis C. Blutas**—appointed St. Louis regional sales manager, Missouri-Kansas Texas Railroad Co.

**Richard P. Herman**—named general sales manager, North American Car Corp., Chicago.

**Walter P. Barrett**—named assistant freight traffic manager, Union Pacific Railroad, Omaha, Neb.

## —Water

**Robert W. Cary**—elected president of the Council of Lake Erie Ports. He is vice president of Toledo Marine Terminals, Inc.

**Michael R. McEvoy**—named sales manager, Sea-Land Service, Inc., Port Newark, N. J.

**Clarence G. Morse**—elected president, Pacific Far East Line, San Francisco.

## Materials Handling

**Hewitt M. Young**—appointed to College-Industry Committee on Material Handling Education, The Material Handling Institute, Inc.

**C. J. Moore**—promoted to vice president-marketing, Exide Industrial Division, Philadelphia.



**Bert E. Phillips** (left)—**H. D. Nelson** (right)—named vice presidents of Clark Equipment Co., Buchanan, Mich.

**Dr. Robert J. Rohr**—appointed manager-product research, Sparton Corp., Jackson, Mich.

**William T. Zuehlke**—first employee of Automatic Transportation Co. to retire with 50 consecutive years of service.

**Gordon W. Disharoon**—promoted to general service manager, Automatic Transportation Co., Chicago; **Richard M. Stienstra**—assistant general service manager.

## General Traffic Department Reorganized

Reorganization of the General Traffic Department of Union Carbide Corp. has divided the department into two main divisions: Traffic Management and Transportation Operations.

**E. A. O'Brien**—continues as senior assistant general traffic manager, will be directly responsible for traffic management functions. O'Brien will supervise activities of the TMs and their staffs.

**R. J. Cunningham**—traffic manager for alloys, metals, calcium carbide, lime hydrate, ores, industrial gases, welding apparatus, and carbon products.

**W. E. Morgan**—Traffic manager for chemicals, olefins, and Pyrofax gas.

**V. F. Treadwell**—traffic manager for plastics (film and food casings), consumer products, anti-freeze, silicones, nuclear materials, and inland U. S. portion of international shipments.

**V. G. Wilson**—assistant traffic manager in charge of rate analysis and research for all raw materials and products.

**P. J. Wellnitz**—traffic manager, Pacific Coast Region, San Francisco.

**Frank C. Tighe**—appointed assistant general traffic manager in charge of transportation operations.

**K. O. Smart**—manager of railroad operations including private cars.

**R. L. Juillerat**—manager of highway transportation.

**L. S. Truslow**—manager of marine operations and marine terminals.

**W. I. Neyland**—manager of warehousing, household and office moves, small shipment operations.

**R. R. McNickle**—manager of distribution cost analysis and research.

**A. J. Fenaroli**—manager of pipe line operations, piggy-back, special projects.

# NEW, IMPROVED S. P. TRANSLOADING CENTER AT EL PASO



Now, westbound carload shipments with partial loads for several Western destinations are being transloaded faster and more efficiently than ever at S.P.'s new and larger El Paso Transloading Center.

As many as 100 freight cars at a time can be handled at this new facility, now strategically placed directly in S.P.'s major El Paso freight yard for faster inbound-outbound service. Four tracks flank the nearly  $\frac{1}{4}$ -mile transloading platform. Capacity is doubled.

Here, or at any other S.P. Transloading Center (see map) . . .

## ONE CARLOAD MAY BE TRANSLOADED INTO AS MANY AS 4 PART LOADS

. . . for direct movement to different Western destinations.

S.P. transloading is *fast*—ultimate deliveries with only one stop instead of as many as four. It's *economical*—no charge for transloading; the one carload rate (plus normal stop-off charges) covers all partial shipments to their respective destinations. It's *safer*, too,

with skillful, careful handling at only the *one* transloading point.

And with transloading by S.P., you get fast delivery to more Western or Southwestern communities than is possible via any other railroad. That's because S.P. has *more* routes west, more transloading centers, and serves directly more points in the Golden Empire.

*For more information on how to order and use S.P. transloading service, ask for our new folder on the El Paso Transloading Center—Southern Pacific Company, 65 Market St., Room 735, San Francisco 5, Calif.*

# Southern Pacific

serving the West and Southwest with  
TRAINS • TRUCKS • PIGGYBACK • PIPELINES

# *On the Line-*



## **Exhaust Troubles**

"What is so rare as a day in June?" asked the poet of old. We asked the same question of a traffic manager who was driving us along a fine, scenic highway. He was taking us to his company's new distribution center, some miles away.

The question barely was out of our mouths when we both started to choke from a cloud of black, acrid exhaust fumes blown downward into our car from a passing diesel truck.

The remarks that followed were anything but poetic. If the driver heard them, he gave no indication.

We think that the head of the trucking line operating that rig will hear about our smoke treatment. At least, our host said he was going to that carrier's freight solicitor.

This incident is not unique to this carrier. However, it seems that this carrier's trucks have been repeated offenders to our host.

"For some time, this carrier's rigs have been picking up and delivering freight at our plant," said this traffic manager. "While the drivers are backing their rigs to our platforms, they throw quite a smoke screen around the place.

"My office is right above the area, and the smoke screen is very objectionable to our staff. We've even had to close our windows while they maneuver in the area.

"The other day I noticed that, after all of these many smoke treatments, the side of our building is beginning to show a gray coating of this diesel fuel exhaust. Sooner or later, I expect to get a complaint from our plant maintenance department."

"There's another angle to this problem that has had me thinking. This smoke either is the result of buying cheap fuel or of bad engine maintenance. If this trucker is trying to save a penny a gallon on his fuel bill, somebody should tell him that he can lose thousands of dollars by the loss of one good account.

"If the exhaust trouble is the result of bad maintenance, there must be times when those trucks break down on the highways. This could account for some of the unexplained delays we've had.

"Whatever the reason, I get the feeling that this must be a pretty careless outfit. I just don't like the feeling of trusting our cargoes to careless or indifferent carriers. I'm going to see if we can't find another carrier to handle these shipments for us. I'll be glad to get rid of those dirty stinking trucks."

Well, that's what the man said. All that we can do is pass the word along. If the shoe fits, we hope that the offending carriers will correct the situation for their own good.

## **Cuban vs. U.S. "Vacations"**

Fidel Castro's idea of long paid "vacations" for Cuban workers was received with mixed reactions here and abroad. So was his feather-bedding plan of spreading the work of five men among six.

According to news reports, most workers were said to have hailed it as a great idea. Employers, bankers, economists, and almost everybody else, said it was a product of a sick mind.

But let's take a look at this "sick" idea in the light of our country's practices.

For years, the majority of our workers have received unemployment benefits from Uncle Sam. Many seasonal workers, and those employed in summer and winter resorts, actually get what amounts to a paid "vacation" in their off seasons.

Our labor unions also pay certain "unemployment benefits."

So what's new or crazy about Fidel's plan? Certainly, there are differences, but they're not too great.

Then, there are labor leaders in this country who have advanced such plans as five days' pay for four days' work. And they defend feather-bedding among their membership.

Aren't these practices equally "screwball" in character? Many people think so. As far as we know, only the beneficiaries disagree.

We hold no brief for Fidel. In fact, we think he's headed for real trouble. But, if his plan is the product of a sick mind, we should take a good look at our own practices. Maybe they're sick, too. We think some are.

*A. H. Greene*  
\_\_\_\_\_  
EDITOR

smart  
truck  
users  
choose



## National Lease

the PREFERRED way to lease trucks

because it's national  
in experience and  
service - local in costs  
and controls



**National Lease** supplies everything but the driver at flexible, local-level costs. On-the-spot management provides highest efficiency; full service, one-invoice truckleasing—the LEASE-FOR-PROFIT way.

**National Lease** service doesn't add to your cost... it saves. Saves the capital and management time you now spend on trucks so you can put yourself—and your money—back into your own business.

### Lease for Profit

Lease a new Chevrolet, or other fine truck, operate it as your own with no investment, no up-keep.



For facts about full-service, "Lease-for-Profit" truckleasing—and the name of your local **National Lease** firm, write



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# Yakkety Yak

By Ye Editor



Our vacation and featherbedding thoughts produced this Cloud Nine inspiration: As long as the government's special umpires okayed higher wages for the brotherhoods, they should make unproductive time tax deductible.

THE LAW—Because an employee refused to join a union in Pennsylvania, she was fired. The Unemployment Compensation Board refused to pay her unemployment compensation.

The state's Superior Court upheld the Board's ruling. Reason: She could have retained her job by paying union dues; therefore, her unemployment was voluntary.

. . . In Connecticut, it's against the law to advertise for a young worker.

The state's Civil Rights Commission says that when a firm specifies how young its prospective employee should be, it is discriminating against older workers.

QUOTE—"Standards are being lowered, ideals are being downgraded, character is being weakened, and our Constitution—in effect—is being rewritten.

. . . "Freedoms now becoming popular are: Freedom from Care, Freedom from Effort, Freedom from Responsibility, and Freedom to Get without having to Give."—William C. Stolk, president, American Can Co.

COMPACTS—Now that foreign compacts have a nice chunk of the U. S. passenger car market, we're going to see a strong bid for truck sales.

. . . So far, the commercial Volkswagens have led the compact truck sales about three to one. Roughly, about 15,000 were sold here in '59.

. . . This year, you will be seeing, hearing and reading such names as Renault, English Ford's Thames, Hillman-Commer, Austin-Morris, Smith's Delivery (an electric), Standard-Triumph's Atlas.

. . . In addition, England's Leyland Motors is going to compete for sales in the conventional truck field—from light deliveries to heavies.

EASY—The popularity of compact cars may be due to the fact that now it's really possible to have two cars in every garage.

## 2ND AM Delivery — Great Lakes to Gulf

**1284 UNITS TO SERVE YOU**

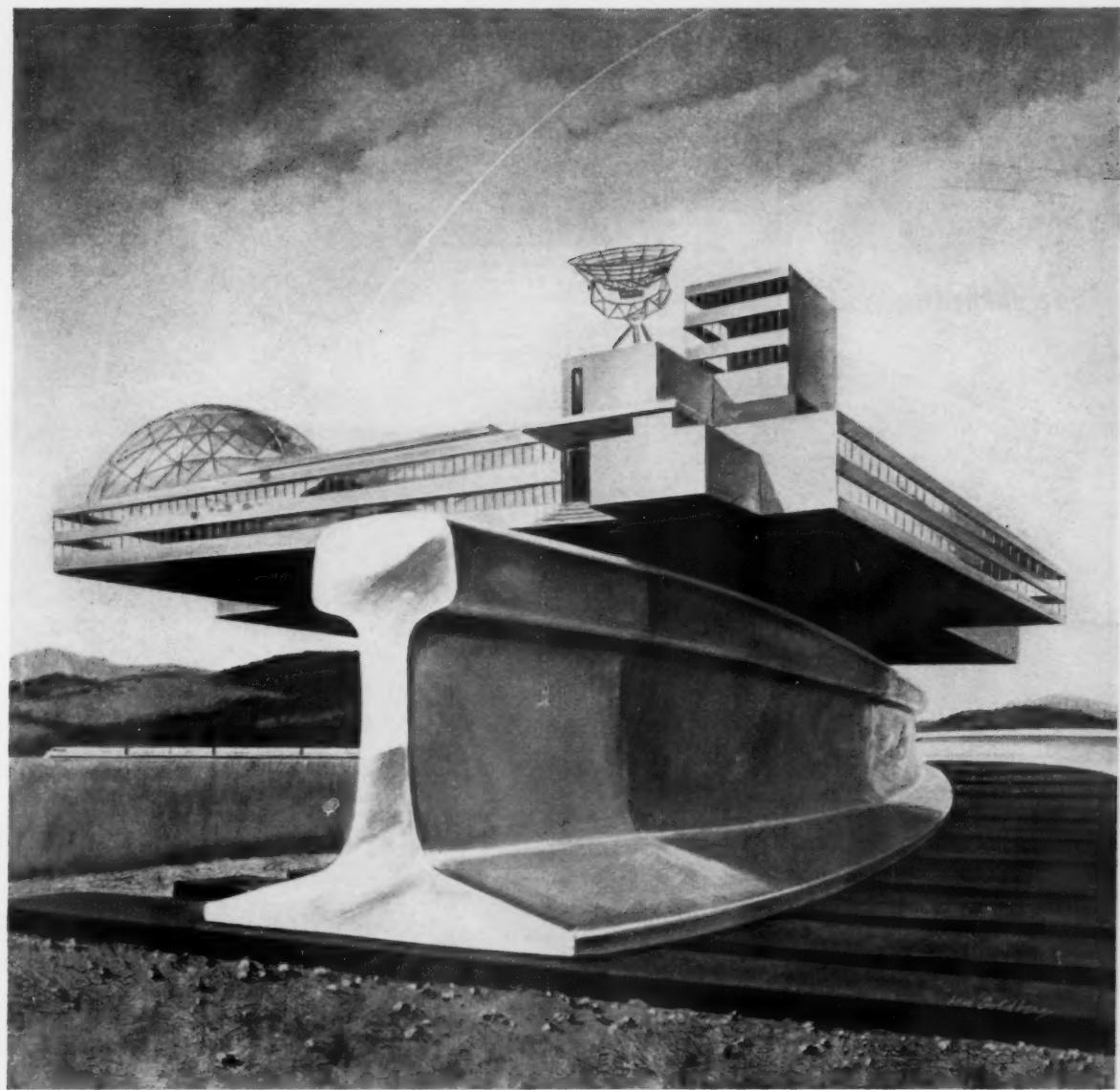
LEGEND

- Gordons Transports
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- Decatur Transit

THRU SERVICE — SOUTHEAST — SOUTHWEST

**Gordons Transports, Inc.**

MANAGING DECATUR TRANSIT TRUCK LINE, INC.



## ***Set your sites on the road to the future...the New York Central!***

The plant site you select today might look quite different tomorrow. Water supply, taxes, labor potential are constantly changing factors.

The Central's Industrial Development specialists can help you gear your thinking to the tempo of tomorrow. You'll find them to be practical, dynamic, and willing to pitch in and help you.

These specialists are at your service. Their knowledge of future trends and developments can contribute to the success of your proposed new plant.

Send in for the new series of Central booklets on plant site selection. They are refreshingly in-

formative. Not a word of sell. Just helpmanship.

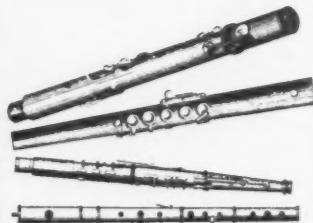
Write: Otto W. Pongrace, Director of Industrial Development, New York Central Railroad, 466 Lexington Avenue, New York 17, N.Y.



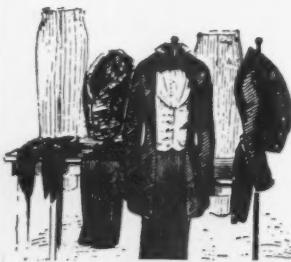
**ROAD TO THE FUTURE**



**For shipping fruits**



**or flutes**



**or two pants suits**

**The better way  
is Santa Fe**

No matter what you ship call the nearest Santa Fe Traffic Office and let the longest railroad in the U.S.A. go to work for you.



## Coming Events

July 19-21—Western Packaging & Materials Handling Exposition, Pan Pacific Auditorium, Los Angeles, Calif.  
 July 21-23—Allied Van Lines, Inc., 32nd Annual Meeting and Convention, Greenbrier Hotel, White Sulphur Springs, Va.  
 Aug. 8-12—MHEDA Materials Handling Course on Chain Store Grocery Warehousing, MHEDA Training Center, Newport, R. I.  
 Aug. 16-17—Air Freight Cartage Conference and Ground Handling Exhibit, Sixth Annual, Chicago, Ill.  
 Aug. 25-27—American Movers Institute, Annual Meeting, Sheraton Park Hotel, Washington, D. C.  
 Sept. 18-20—Associated Traffic Club of America, Annual Meeting, Dinkler Plaza Hotel, Atlanta, Ga.  
 Sept. 27-29—Cargo Handling Exposition and Symposium, by New York Chapter, Merchant Marine Academy Alumni Assn., Inc., Pier 1, New York, N. Y.  
 Oct. 2-5—National Defense Transportation Assn., National Convention, Roosevelt Hotel, New Orleans, La.  
 Oct. 7-9—Delta Nu Alpha Transportation Fraternity, 20th Annual National Meeting, Hotel Roanoke, Roanoke, Va.  
 Oct. 11-13—National Association Shippers Advisory Boards, Pick Nicollet Hotel, Minneapolis, Minn.



"Stop it! I don't care HOW fast it is."

Oct. 12-27—10th Pan American Railway Congress, Rio de Janeiro, Sao Paulo, Brasilia, Brazil.

### Shippers Advisory Boards

July 13-14—Mid-West, Milwaukee, Wis.  
 Sept. 7-8—Pacific Coast, San Francisco, Calif.  
 Sept. 15-16—New England, Pike, N. H.  
 Sept. 20-21—Ohio Valley, Columbus, Ohio  
 Sept. 20-22—Southwest, San Antonio, Tex.  
 Sept. 28-29—Atlantic States, Albany, N. Y.



From coast to coast, thousands of industrial, commercial and institutional establishments have discovered the economy of using ADT automatic protection to safeguard life, property, and profits against fire, burglary, hold-up, sabotage and other hazards.

The leader in automatic property protection, ADT manufactures, installs, maintains and operates the most modern protection systems available anywhere. ADT electric and electronic systems are specifically designed to provide maximum security at lowest cost. Thousands of ADT subscribers enjoy substantial savings over other,

less dependable and far more expensive methods of guarding their properties. At the same time, they are assured of the most reliable protection available.

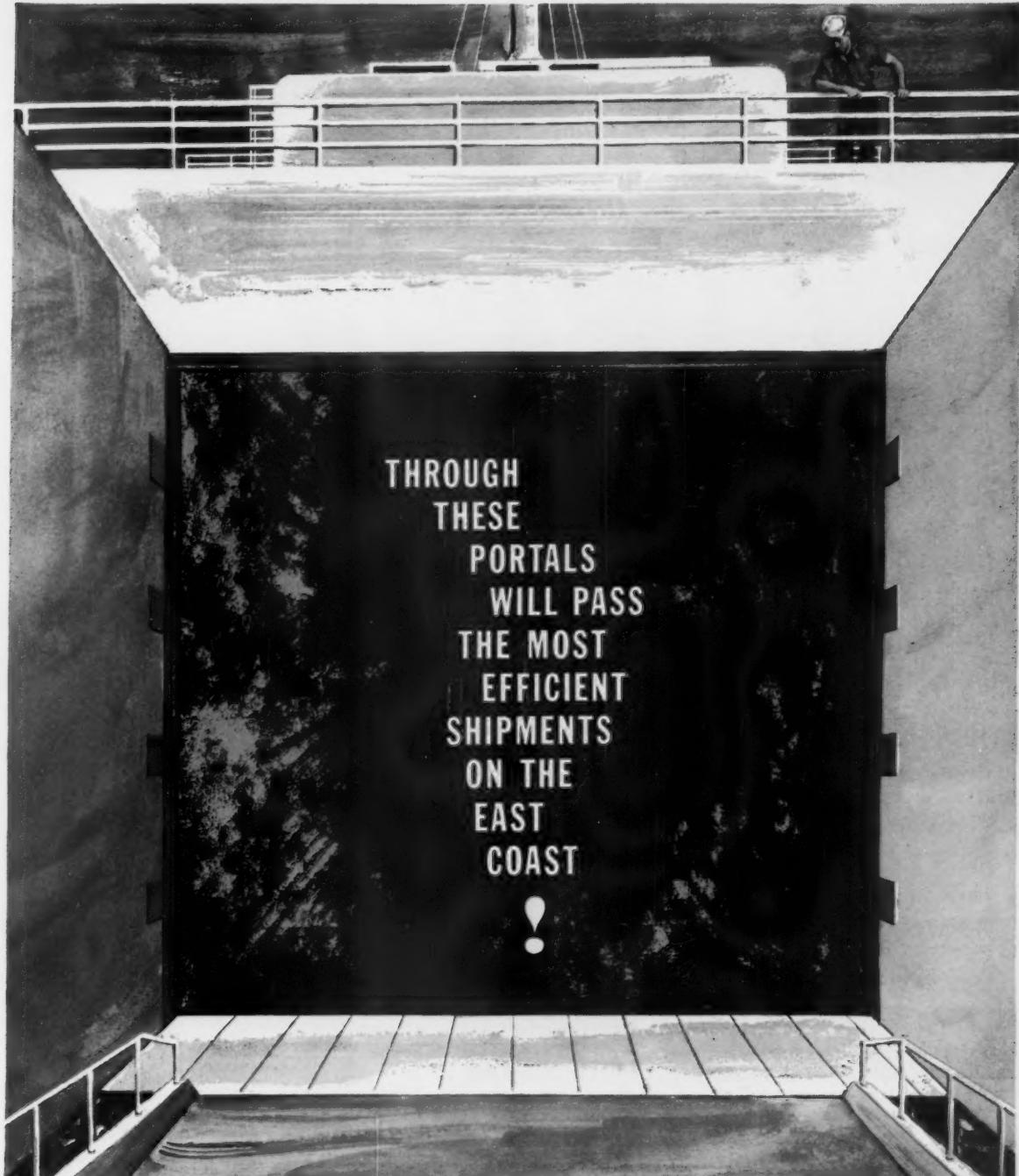
ADT central stations are located in principal cities. In other areas, ADT systems may be connected directly to police and fire departments. These systems are fully maintained and regularly tested by ADT specialists.

For additional information, call our sales office in your city, listed in the Yellow Pages under *Burglar Alarms* or *Fire Alarms*, or write to our Executive Office.

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**AMERICAN DISTRICT TELEGRAPH COMPANY**  
 Executive Office: 155 Sixth Avenue, New York 13, N. Y.  
 A NATIONWIDE ORGANIZATION

Circle No. 3 on Card, Facing Page 74, for more information

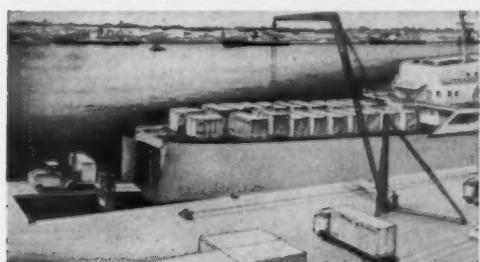




Stern loading! LTL shipments! Containerization! All these innovations—and more—will make it worth your while to investigate the "saving-service" of the new Erie & St. Lawrence Containerships. On the ways now...on the water this summer!

A SCHEDULED COASTWISE SERVICE BETWEEN  
NEW YORK • CHARLESTON • JACKSONVILLE

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CONTAINERSHIP SERVICE**



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Now, ship with greater safety for less cost with Firestone's

# NEW Air-Blok



## Dunnage cushion assures damage-free delivery



Jarring starts and jolting stops can't harm lading cushioned by Air-Bloks.



Air-Blok is easy-in, easy-out dunnage; one man can block entire car swiftly.



Air-Bloks are quickly deflated, rolled and tied with built-in straps for easy return.



Tough bladder is encased in treated canvas envelope for double protection.

Air-Blok is a tough Firestone rubber bladder encased in treated canvas. It supports lading with a uniform pressure over the entire surface of the dunnage. It absorbs shock, takes up slack and tightens the load to assure delivery without damage.

Air-Blok pneumatic cushions give lading maximum protection in shipment—save you the lost time and extra expense of filling the same order twice. Pneumatic dunnage has been proved in practice by the U. S. Army Quartermaster Corps.

Air-Blok is the no-waste dunnage. You buy cushions once, use them repeatedly, and save more with each trip. Customers return the Air-Bloks instead of the cargo.

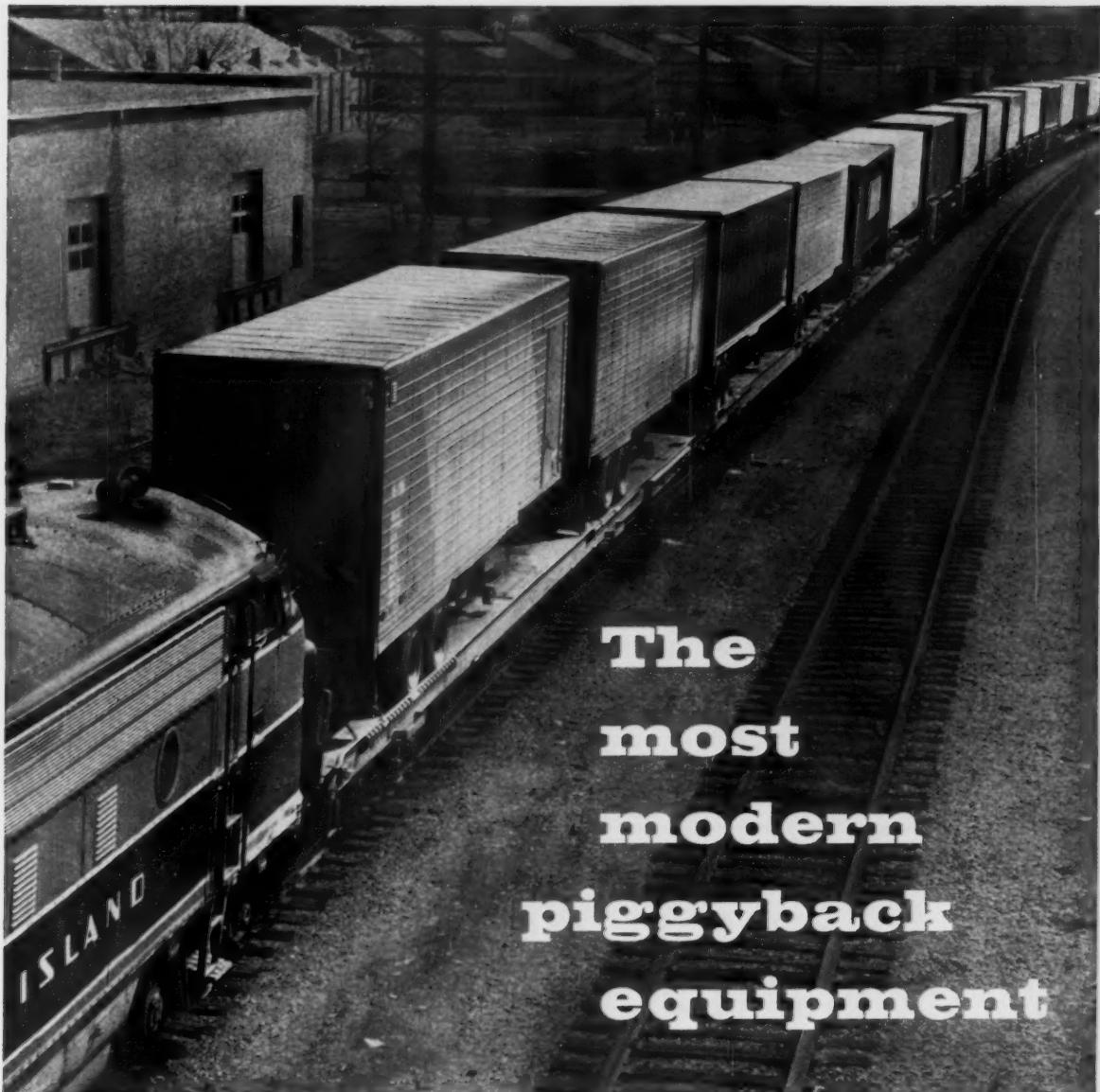
Air-Blok lets one man block lading quickly and easily, lets cars load and empty faster. Labor costs come down, demurrage charges disappear.

Put Firestone Air-Blok to the test. A few experimental shipments will show savings in every way. For information write Firestone Industrial Products Company, Noblesville, Indiana.

# Firestone

INDUSTRIAL PRODUCTS COMPANY  
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The  
most  
modern  
**piggyback**  
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*...another good reason for shipping Rock Island*

The effectiveness of your piggyback shipment depends largely on the efficiency of the equipment that's used. In the past two years, the Rock Island has added 300 new cars specifically designed for piggyback service—all embodying the latest engineering developments—for a total fleet of 565 piggyback cars. This equipment means that all trailers can be loaded without modification...tiedown is faster and more secure...loading and unloading time is cut.

Rock Island combines the efficiency of these new flat cars with extensive piggyback experience. Just one result of this combination is a new trailer hitch designed to expedite your shipments

by cutting trailer handling time to less than three minutes. It was developed by employees of the Rock Island Motor Transit Company with knowledge gained through broad experience in both rail and truck transportation.

So when you ship piggyback, ship via the dependable Rock Island. Get the benefit of equipment engineered to meet your requirements...plus the services of experienced, conscientious personnel...plus strategically located loading and unloading ramps...plus a shipping plan that best fits your needs. Your Rock Island traffic representative will help you put this effective combination to work. Call him today.



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Colson starts with the first essential . . . mobility, and begins building quality there with Colson Casters and Wheels. Seventy-five years of experience go into putting together the *total* unit. Literally from the ground up Colson builds it better, supplying the complete product. From wheels to completion, each part of this Colson Lift Jack System is made with the careful precision that has made Colson famous for long-lasting quality. Quality costs less. Buy once, buy the best . . . Colson.



75 years of experience in supplying field-tested equipment and casters to industry and institutions. Millions of satisfied customers know and respect the name COLSON . . . synonym for quality.

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Colson's Lift Jack System makes materials mobile—ready to roll. In plant or warehouse eliminate dead storage, keep production continuous and gain speed from load to load. Colson's Lift Jack transports the loaded semi-live skid with least effort on quality running gear. The Lift Jack System pays for itself in time and labor saved. Send today for free catalog—The Colson Lift Jack "Cycle of Savings."



Used with wood skids to give resilience and cushioning . . . also smooth steel decked skids.

**THE COLSON CORPORATION** 7 S. Dearborn Street

Plants in: Jonesboro, Ark.; Sommerville, Mass. and Elyria, Ohio CHICAGO, ILLINOIS

Circle No. 5 on Card, Facing Page 74, for more information

**By Peter Noone**

*Assistant Editor*



JULY 1960 . . VOL. 59, No. 7

## New phenomenon... the executive pilot

**S**HORTLY after 8 a.m. one morning recently, the co-owner of a truck-tractor-trailer leasing company took off in the firm's business airplane for Albany, N. Y., to inspect a customer's fleet of tractor-trailers.

While in Albany, Sol Berman of Berman Service, Pennsburg, Pa., received word that B and P Motor Express, South Bend, Ind., wanted to close a contract with him as soon as possible. The plane returned the customer to Pottstown, Pa., flew on to South Bend for the contract signing, and returned to Pottstown that evening.

Berman Service is just one of the companies which keep our nation's 30,000 business planes active daily. Last year, dollar sales of business and utility aircraft hit a peak of \$173 million—almost seven times the retail volume of 1950. And considering current trends and industry projections, it can be conservatively estimated that in 1970, annual business will reap \$800 million.

### The Competitive Edge

With business planes, users can reach more markets, improve customer service, expand operations, and increase the productivity and efficiency of key personnel. TM's use business planes to investigate loss and damage on the scene. Even "smaller" companies are finding that the time-saving convenience and mobility of a private airplane give them a competitive edge.

And contrary to popular beliefs, company-owned planes do not compete with commercial airlines. In reality, there is a growing partnership between business and airline aviation. A recent survey by the National Business Aircraft Association shows that the purchase of a company plane is almost always followed by an increased use of the commercial airlines by company personnel. Of the approximately 6500 airports in the nation, fewer than 600 are served by scheduled airlines. And many which are served have only one or two daily flights.

**Business executives in transportation and other fields are leaning more heavily on private planes to meet competition; look for 60,000 by 1970**

Company-owned planes can provide quick feeder service and reduce time-consuming ground travel to and from terminal points. This is true especially where firms are located away from the larger industrial centers.

The operations of Berman Service encompass all states east of the Mississippi, from Maine to Florida and put more than 300 hours on the company's seven-place, twin-engine plane during its first year of use in 1958. The plane

is used by the four Berman brothers, the executive vice president, sales reps, maintenance director, purchasing agent, and advertising manager. While top executives still seem to have the edge on business planes, companies will soon realize that the smaller and less expensive aircraft available can be efficiently utilized by all branches of their corporate operations.

Because of the fast tempo and  
(Please Turn to Page 68)



# New three-wheeler for industry —the business airplane

When you decide to purchase the benefits inherent in business aircraft check with the manufacturers on these pages for maximum speed, comfort, and mileage



Higher useful load, new interior with seating for six to seven persons, and a new air-stair door are a few improvements to Beech's 50 Twin-Bonanza airplane

Champion Aircraft Corp. produces the Traveler series equipped with no-bounce oleo landing gear, landing lights, hydraulic brakes, adjustable seats, pants



GATHERED on these pages are representative samples of what is going on in the business and private aircraft industry. Here is the result to date of years of testing, elaborate research, and intelligent application.

Space does not permit illustrations of each type of aircraft manufactured by every company, but most leaders of the industry are mentioned. Profitable business flying does not demand craft with plush cabin accommodations and ultra-modern extras, but they often make the hours aloft more comfortable.

#### Air-Stair Door

Higher useful load, a new interior with individual seating for seven persons, and an air-stair door with walk-in entrance lead the list of improvements to Beech Aircraft Corp.'s Twin-Bonanza. Top speed for the Twin is 235 mph and it cruises comfortably at 223 mph at 70 per cent power at 15,200 ft. Service ceiling is 28,000 ft and the Twin's maximum range totals 1650 miles.

The craft is equipped with track-mounted reclining chairs, a wide center aisle, and work table. A broad choice of seating arrangements is available including a couch installation. The pilot's chair has a new vertical adjustment for better visibility. The lower cabin floor increases headroom, while new square wing tips help improve the craft's aerodynamic efficiency. The cabin air is changed constantly during flight.

#### Passenger Comforts

Pilot and passenger comfort is the main field of concentration at Cessna Aircraft Co. as exhibited in its middle line or series of aircraft.

Three of the company's planes fall into this line; model 180, 182, and the Skylane. The 180 is designed for travel on rough terrain as a cargo and passenger carrier. It is equipped with conventional landing gear and certified for operation on standard or amphibious floats and skis.

The 182 was especially designed as an "easy-to-fly" airplane for business executives. The Skylane is the deluxe and fully equipped edition of the 182 with full panel, overall three-color paint design, wheel speed fairings, and tinted glass—all as standard equipment.

Both the 182 and Skylane have swept fin and rudder to reduce drag. All of the three crafts from Cessna have a new rear seat area bulkhead with additional headroom for those in rear seats. Rear seat windows have been enlarged so that there are now two additional slide windows just off the rear seat area.

Other comforts include upholstery improvements and extra map pockets. The 182 features speeds up to 167 mph; the 180 and Skylane crafts have speeds up to 170 mph. Maximum range for the three is from 835 to 845 miles.

Climbing at a rate of 1750 fpm is Downer Aircraft Industries' Bellanca 260 aircraft with wings of Sitka spruce protected with a plastic coating. Its instrument panel zones the instruments functionally—radio equipment in one part, power instruments in another.

#### No Icing

Only liquid, not vapor, reaches each cylinder of the 260-hp engine. This reduces any danger of icing. Smooth landings are aided by new

tricycle gear. All three wheels of the gear are the same size. The nose wheel has direct positive steering. Top speed is 208 mph with a cruising speed of 203 mph. Maximum range is 880 miles.

The Traveler, Deluxe Traveler, and Tri-Traveller are part of the series from Champion Aircraft Corp. All models of the series are equipped with 95 hp engines. They have fuel capacities of 26 gal. The no-bounce oleo landing gear is another feature along with hydraulic brakes, soundproofing, and wheel pants.

Champion recently introduced Tri-Con—companion model to the  
(Please Turn to Page 71)

#### Other Aircraft Companies

Aero Design and Engineering Co.,  
Bethany, Okla.  
Bee Aviation Associates, Inc.,  
San Diego, Calif.  
Call Air, Inc.,  
Afton, Wyo.  
Colonial Aircraft Corp.,  
Sanford, Maine  
Fletcher Aviation Corp.,  
El Monte, Calif.  
Grumman Aircraft Engineering Corp.,  
Bethpage, Long Island, N. Y.  
Mooney Aircraft, Inc.,  
Kerrville, Tex.  
Morrisey Aviation, Inc.,  
Santa Ana, Calif.  
L. B. Smith Aircraft Corp.,  
Miami, Fla.  
Taylorcraft, Inc.,  
Connellsville, Pa.  
Transland Aircraft,  
Torrance, Calif.  
Trekker Aircraft Corp.,  
Milwaukee, Wis.



The Aztec by Piper Aircraft Corp. will travel night or day in all weather for a range of 1400 miles at 10,000 ft. In an Aztec you travel at 200-215 mph



The 182 is Cessna's easy-to-fly plane for business pilots. Note swept fin



This is the 295-hp Super Courier by Helio. It can carry up to 1900 lb



New twin-turbine powered Vertol 107 (above) has seats for 24 passengers. It is fully equipped



Chopper by Omega Aircraft Corp. is shown carrying goods in Bunyon box, but sling works too

## Helicopters/new boost for customer service

**Helicopters are strengthening the bond of customer relations by making executive "in person" calls possible "within the hour;" more sales in less time**

**T**WENTY-ONE years ago, the Russian-born inventor who first showed aerodynamic aptitude by building planes for the Czar's army ushered in the American helicopter industry with the first complete chopper.

Igor Ivanovitch Sikorsky led the way for further developments which now capture the attention of the more than 15 major helicopter manufacturers who make up an industry which supplies the means of operation for the 156 registered operators flying 631 helicopters—not to mention sales to private-use operators.

### Versatility

These machines are as versatile as their basic flying pattern of straight up and down and side-

ways. They find daily application in personnel transportation, powerline patrol, offshore oil selection flights, construction and pipeline work, municipal safety and protection plans, and farm and ranch work. One quarry operator uses a chopper to keep tabs on his five major quarries.

The growth of helicopters has reached a point where various city governments are formulating plans for heliports and helistops. St. Louis, New Orleans, and Philadelphia are among the larger communities planning such facilities.

But perhaps one of the most helicopter-minded cities is Chicago with its bevy of private heliports. Many choppers can settle on any plant roof which is strong

enough to hold a normal snowfall. Complexes like Motorola and Hilton Hotels use choppers to expedite shipments and woo airway customers the moment they land at Midway or O'Hare Airports.

Marshall Field and Co. uses choppers to tie its Chicago executives in with similar operations at its suburban shopping center. The Marshall Field case involves trading a 90-minute automobile ride for 13 minutes in the air. Other Chicago firms traveling at high altitudes are Shell Oil, Diamond T Motors, Natural Gas Pipe Line Co. of America, Continental Can, A. B. Dick, Admiral Radio, and the Chicago Tribune.

One thing which helps to make helicopters so practical for executive travel is their ability to travel between points in any type of weather. Last year executive and company use of helicopters enjoyed a gain from 83 aircraft to 102. One company estimates that its helicopter saves a minimum of eight hours per passenger and that when top management and highly skilled labor hours are computed, the helicopter amasses

Few productive quarry operations are placed side by side; one quarry owner uses a copter to keep tabs on pits

This all-weather helicopter is made by Sikorsky and bears the tag of Sky Liner. It can travel at 150 mph. The passenger door requires no ramp



Franco-American whirlybird is jet-powered and marketed by Republic Aviation. Seats five, requires no engine warmup



This Bell helicopter holds sufficient amount of luggage for each rider

a total of 800 work hours saved, yearly.

A recent survey showed that there are 27 government agencies using helicopters compared with only 19 in 1958. They operate 63 copters compared with 30 in 1958.

#### Heliport Material

A moving force toward the advancement of helicopter facilities is the Heliport Engineering Committee of the Aerospace Industries Association of America, Inc., located in Washington, D. C. The Committee has developed design guide material which can form a sound basis for your present or future construction plans. The Federal Aviation Agency is in agreement with the Committee's recommendation of a .75 helicopter gross weight per square foot figure as maximum for all kinds of impact loads.

Many members of the industry seem to feel that the future of the helicopter is tied and can be greatly broadened by the jet en-



Bell choppers fly replacement parts to crews made inoperative by equipment downtime. Helicopters can be used to move into areas not near highways, etc.

gine. Some of the advantages from turbine engine power include a 40 per cent increase in payload over a 100-mile range compared to the same copter powered by a piston engine of identical horsepower. Inspections and overhaul maintenance on the turbine copter require only a third of the time piston-powered models do, and passenger capacity is increased at less cost per passenger mile.

But to consider helicopters only in the light of passenger travel is to ignore their abilities as modified air freight carriers. Almost all of the copters in operation today have cargo sling facilities which allow them to transport bulky and odd-shaped material. One manufacturer's helicopter handles sling and deck cargo.

The rear passenger seat lifts up for deck cargo. •

# Pinpointing transport's hidden

This method translates differences in transportation service

By John W. Baer

**F**REIGHT rates and loading costs are not the only costs involved in a shipment of freight.

If a cost accountant has not already pointed it out to him, a smart traffic manager soon should see that transit time directly affects inventory and the need for storage facilities. Moreover, traffic managers and purchasing agents are aware of the rarely measured cost of rising blood pressure when shipments are not on schedule.

## Measuring in Dollars

Today, the shipper or consignee can measure in dollars his total cost of transportation service. Traffic research departments in some railroads and air cargo lines have developed techniques to measure a shipper's total transportation cost.

Knowing this, carriers can estimate what rate differential must exist to draw traffic from one carrier to another. For example, the traffic analyst for a railroad often must estimate the rate differential which a railroad must set to draw business away from the truck. Since this differential essentially reflects a discount for slower and sometimes less reliable service, the traffic analyst must estimate the customer's total transportation cost by truck and by rail.

As a shipper or consignee, you can use these techniques. They will help you estimate the total cost of a carrier's transportation service. With them you can com-

pare the total transportation cost of two types of carriage.

## Formula in Brief

In brief, you total your freight rate, handling costs, loss and damage, transit time cost, and unreliability-of-service cost to arrive at your total transportation cost.

Assuming that you already are keeping tabs on your freight rates, loading and handling costs, and average loss and damage ratios, the other step is to measure your transit-time cost and unreliability-of-service cost. Estimating these is easier than you might think.

Transit-time cost and unreliability-of-service cost are measured by two other costs—inventory-investment cost and storage-facilities cost. In brief, the cost of inventory investment is usually the interest rate you are now paying or would have to pay if you borrowed money to invest in the inventory.

The size of the inventory you must carry is directly affected by total transit time and by the dependability of service. The size of your inventory also affects the size and resulting cost of storage facilities.

## Transit Time and Inventory

Next we look at how transit time affects the size of inventory and storage facilities. As an example, take the case of railroad service and see how transit time affects your costs. For the moment we will ignore the unreliable-service cost.

Depending on who holds title to

the goods after they are loaded, either the shipper or consignee has a carload of freight in transit. This must be included in his inventory. If you can cut your transit time one day, your inventory in the freight car is obviously tied up one day less; it is ready for sale one day sooner.

If you can depend on one-day quicker service, you can keep a smaller inventory. You, as a consignee, can replenish it one day sooner. At the same time, a shipper who doesn't load directly from the assembly line can keep a smaller inventory of finished goods.

One of the days saved on transit time can be used for manufacturing the goods ordered. Thus, shorter transit time sometimes saves money for both the shipper and the consignee. As for storage-facility costs, smaller inventories obviously need less storage space, provided that other factors are constant.

Now, let us see how we can estimate these costs in the simplest fashion. The first step is to define "one day's transit time" in some consistent form. For instance, do not count weekends if you feel that Monday deliveries are just as good as weekend deliveries.

To measure the cost of your inventory placed in a freight car, get an evaluation of this inventory to you. The cost of replacing inventory is a good measure.

## Use Bank Interest Rate

The next step is to estimate the bank interest rate you would have

# costs

into dollars

TABLE 1: Computing Average Lateness Per Trip

Number of Trips	Expected or Average Transit Time	Actual Transit Time	Late Transit Time
1/4/59	2 days	2 days	-
1/23/59	2 days	1 days	-
2/4/59	2 days	3 days	1
2/10/59	2 days	5 days	3
etc.	etc.	etc.	etc.
100 Trips	(200 days)	(210 days)	37 days
Average Lateness Per Trip .37 days			

TABLE 2: Comparison of Total Transport Cost between Carriers A & B

Carrier	Freight Charges	Average Loss & Damage Per Car	Hand- ling Cost Per Car	Total Value of 1 Day's Transit Time	Transit Time	Total Transit Cost	Minimum Unreli- able Service Cost Per Trip	Total Freight Cost
A.	\$200.00	\$10.00	\$10.00	\$6.89	2 days	\$13.78	\$2.55#	\$236.33
B.	\$200.00	\$10.00	\$10.00	\$6.89	4 days	\$27.56 \$13.78	\$6.89## \$4.34	\$254.45 \$18.12

# Average Lateness Per Trip - .37 days

## Average Lateness Per Trip - 1.00 days

to pay on a loan to produce or purchase such an inventory, e.g., 6 per cent interest rate per annum. The bank interest rate is actually the minimum cost of your inventory investment. If a purchase discount of 2/10 net 30, for example, is considered a charge for delayed payment of a bill, this represents a 35 per cent per annum interest charge. If your goods are tied up in transit one day less, you have one day more to sell your merchandise before the bill's discount period terminates.

Taking a realistic estimate of the interest rate on your inventory investment, divide this rate by 360 days for your per day interest rate on your inventory investment. Multiply your evalua-

tion of the inventory in the freight car by this per day interest rate and you have the cost of your inventory investment for one day.

The figures below provide an example of how to arrive at one transit day's interest charge for inventory investment per car:

Weight involved per car	20,000 lb
Evaluation of car- load	\$10,000
Interest rate per annum (360 days)	10%
Interest rate per day	.0278%
Interest charge on inventory invest- ment per car per transit day	\$2.78

If your company does its own warehousing, your cost accountants may have an estimate of what it costs your company to store goods for one day. If not, call a large commercial warehouse and ask what the lowest storage rate on your goods, if handled in largest quantity, would be.

This rate will be stated in cubic feet per commodity type as a rate per month. There also will be a flat rate for weight handled. Using this data, you can estimate what it theoretically costs your company for one day's storage. Continuing the above example, you now have new figures to add to your tabulation. This is the one day's storage charge for an inventory equivalent to a carload:

(Please Turn to Page 70)

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# Tight money and the field warehouse

WHEN national policy tends to restrict the flow of money into the production and marketing stream to curb inflationary tendencies, banks and other lending agencies are forced into a more conservative position.

Security requirements to back loans become more severe and businessmen are forced to explore every available source of credit to meet their daily needs. This situation can be found in the Pacific Northwest wood products industry which includes sawmills and plywood plants. These industries accumulate large inventories of logs (called cold decks) during the open season, to carry them through the winter when woods operations are curtailed. Restricted credit obviously sets up a temporary hurdle in such seasonal industries. Bankers look askance at inventories. Nevertheless, inventory building does not stop. It cannot stop as long as market demand exists for finished products.

Moderate inventories are considered commendable by many economists. But there is strong opposition to acquiring them at excessive speed. Such a condition would have an over-stimulating effect upon industry and thus defeat attempts to hold the line.

Accounts receivable, chattel mortgages, and advances against trust receipts sometimes become less desirable as security against loans. As they do, a measure of flexibility is found in using inventories held by a third party as collateral. Field warehousing is this type of arrangement.

In general, where field warehouses are employed the tendency is to relax the present rather stiff lending policy, thus enabling borrowers to arrange loans with their

Field warehousing can provide you with full warehouse protection and at the same time improve your credit with your banker. Here are the rules

Alfred L. Lomax

*Professor of Marketing,  
University of Oregon*

bankers with less difficulty. This is especially true in California. There, established customers of field warehouses are enjoying the usual benefits of three-party controlled financing.

This combination of warehouse-bank-borrower based upon the liquidity of inventories is an excellent medium on which to build an acceptable credit position. At present, inventories show a remarkable recovery from the upsetting influence of the steel strike. Undoubtedly they will assume a more important place in the national economy in the months ahead.

## Field Warehousing and the Client

Field warehousing is the transfer of public warehouse functions to the premises of a manufacturer or distributor. This intimate association of the field warehouse company with its client provides the latter with full warehouse protection. At the same time, it improves his credit with his banker.

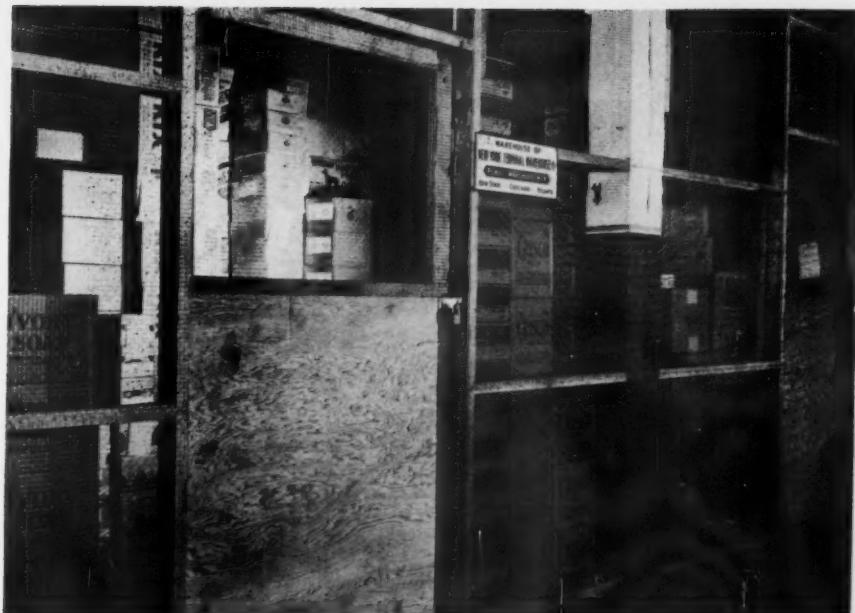
Before a field warehouse comes upon the premises of its client,

called the depositor, it leases that part which houses the inventory. A lease is then recorded in the appropriate city or county office and permits the warehouse company to move onto the depositor's property. A custodian, usually an employee of the client, is then appointed.

Selection of this person from the employer's personnel may seem inconsistent in view of the requirement to keep owner-warehouse relations separate. But experience has proved that his intimate knowledge of the business makes him a preferred selection against another who has no background of the business. For the duration of the lease, he becomes a heavily bonded employee of the warehouse company.

Leasing places the warehouse company in complete control of those goods which the client-depositor has selected for warehousing. The area to be controlled is set apart by partitions and other means to meet the very detailed security provisions of the lease. To guard against pilferage or any unauthorized removal of merchandise from the premises, windows, doors, shafts, and other openings are closed and even padlocked. Only the custodian or authorized personnel with keys may enter the restricted area. No one, not even the client, is permitted to trespass upon this excluded territory un-

EDITOR'S NOTE: As this issue goes to press, several regional banks of the Federal Reserve System are cutting their rediscount rates from 4 per cent to 3½. The explanation given was that there has been a marked stabilization of inflationary forces. However, individual banks indicated that it will be some time before money availability will ease.



A sign indicating the entrance to an enclosed area states that it is leased. The name of the lessee warehouse company is stated also. It helps act as suitable legal notice



All inventoried goods must be immediately identifiable against similar goods which are not included in the lease. Note such signs on the door and doorway area here

less he is accompanied by the custodian or a representative of the warehouse company. If open storage is involved as in the case of log ponds, cold decks of logs, ore piles, or other outdoor warehousing, watchmen are usually employed to patrol the area.

A specific requirement of field warehousing is that the inventoried goods be immediately identifiable as against similar goods which are not included in the lease. This goes for individual pieces such as logs floating in a mill pond where each log is made identifiable either by a placard or a mark. As there can be no misunderstanding on this point, the leased portion is heavily placarded with signs so that all who read may be specifically informed of the nature of the operation. The warehouse company's possession must be exclusive and notorious according to the law.

(Please Turn to Page 72)

Pacific Northwest wood products industries accumulate inventories of logs during the open season to carry them through low winter operations

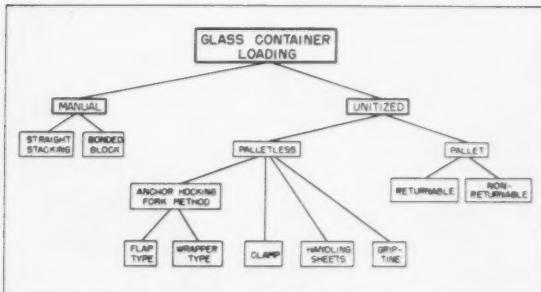


# Flaps and wrappers unitize

Wrapper and flap methods of unitizing make large, practical shipments for

THE CONTINUED growth of glass container usage and customer emphasis on cost-cutting materials handling methods have given impetus to greater numbers of unitized shipments in the glass container industry.

Such unitizing has resulted in special handling and loading problems for the industry which are complicated by a lack of uniformity in method. As evidence, the chart below shows the diversified methods now used in the glass container industry.



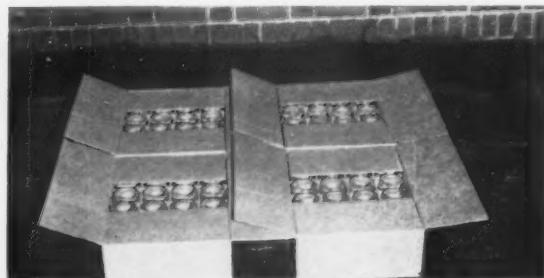
The method discussed here is used and was developed by the Anchor Hocking Glass Corp's. Salem, N. J., plant in 1957. The company has been making shipments with this method for over two years to some of its main customers.

The potential inherent in the fork method concerns economy and simplification of handling. The method presents a versatile and standard method of unitized handling. And because of the moderate cost of the fork-lift trucks used, the method offers advantages to operations of the glass manufacturer and his customers. The forks are compatible with the pallet system.

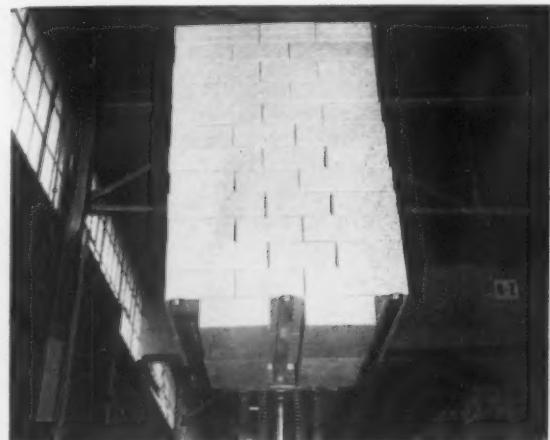
## Fork Method

The Anchor Hocking unit is designed with spaces for fork insertion at the base. Two or more forks are used to handle a unit, depending upon its design, load dimensions, size and shape of cartons, arrangement of the base, and customer's handling equipment and plant facilities. The forks differ from standard pallet-handling forks in that they are narrower, have rounded, untapered tips, and are sometimes offset so they can be extended beyond the lift truck's standard carriage width.

The company has developed two types of unit loads designated as flap type and wrapper type. A flap-type unit has two of the unsealed flaps of each base carton opened and spread out. Lift-truck forks are inserted into the base of the unit under the open flaps. When the unit is raised, the flaps are held against the bottom of the next layer of cartons. The forks support the unit when it is moved and at the same time carry the base cartons by their flaps without damage.



Pictured here is a flap unit. Base cartons are positioned with two of the unsealed flaps of each carton



opened. The bottom view shows how the forks, in this case three, support the load and carry base cartons by their flaps.

The same format makes it possible for a four-carton base to be moved by five forks. Note that top cartons are tied.

# breakables

this manufacturer of bottles, jars



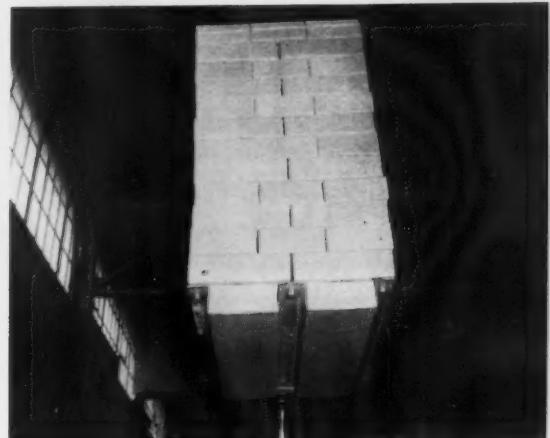
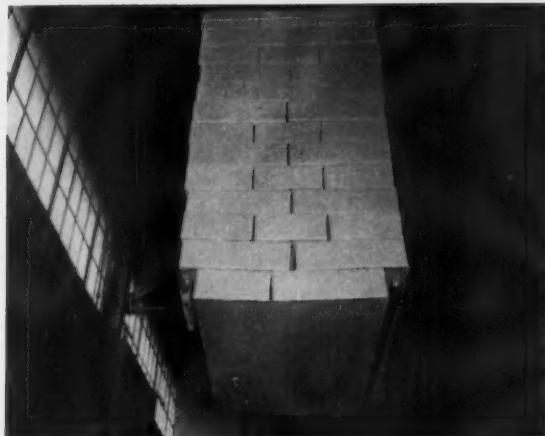
**Wrapper Type**

In a wrapper-type unit, a specially scored sheet of paper is folded around base cartons to provide a lifting medium. The flaps on the base cartons remain closed. This type of load is easily adapted to cartons with sealed top flaps, very small cartons, trays, or for customers who prefer this wrapper due to special problems at their plants. Since no extra material is used, the flap units are more economical.



Here is a wrapper load with base cartons positioned in the wrapper. Note the top layer of cartons is tied. This load is handled by two forks.

Three fork loads use a similar format, but the load is increased.



**Five Fork Unit**

After the wrapper is in position for the building of the unit, four base cartons are placed in it. Jars



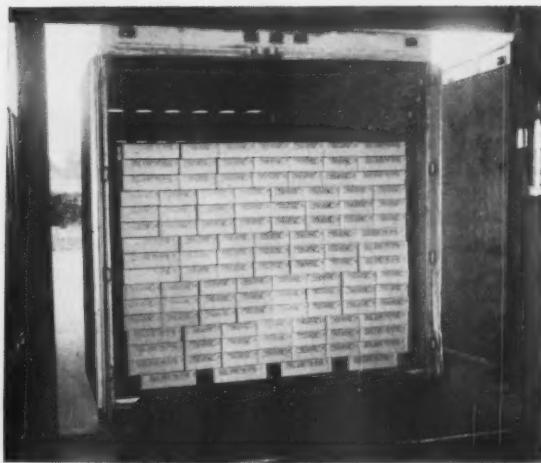
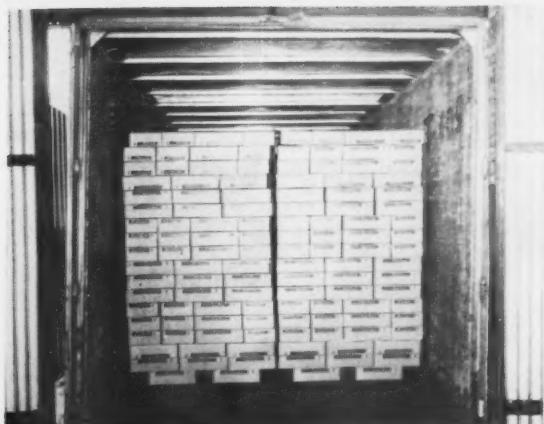
in cartons contain baby food. With the fork method it is usually possible to tailor the unit shape and size to fit the carrier.

It's just as possible to fit the requirements of the customer. For truck shipments, units are built in either full or half trailer widths. Here is a split unit. Normally, 16 of the half loads will fill a 35-ft trailer.

(Please Turn Page)

## ... Unitize Breakables

(Continued from Preceding Page)

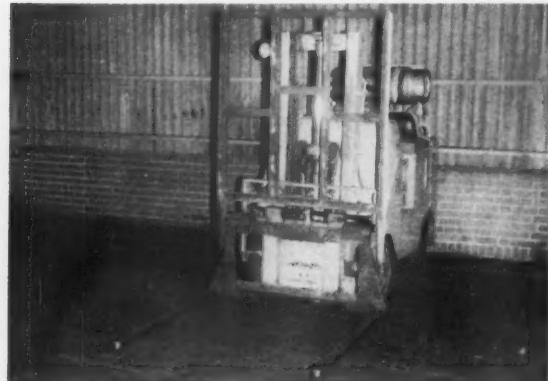


This solid unit is as useful. Normally eight of them will fill a 35-ft trailer.

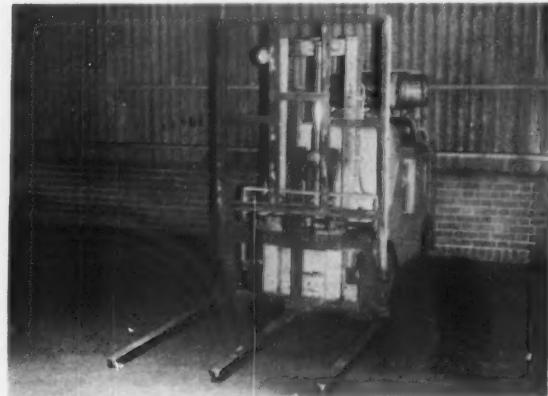
### Equipment

If you have a counterbalanced fork-lift truck, the only requirement for this fork method will be the special forks. They can be built by a lift truck manufacturer or by a plant machine shop for less than

\$500. This is less than most equipment used for other palletless methods shown on the chart at the beginning of this article.



A side shifter will give you straight loads and fast pick-ups. The attachment is compatible with the pallet system. Two or three forks can be used to



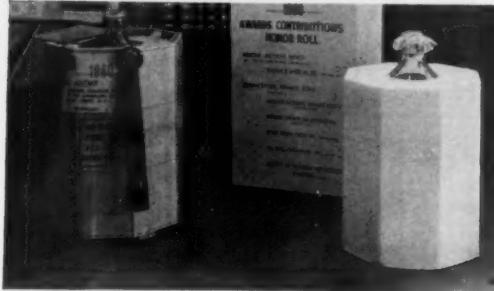
handle regular pallets. A five fork attachment can be used to handle two small pallets simultaneously, side by side.



There are, however, some limitations. But experience has shown that the limitations are offset by reductions in loading and unloading time realized over manual handling. Trailer dock time is thereby cut. Pallet investment, maintenance, and freight costs of hauling pallets are eliminated. The storage and shipping space normally occupied by pallets can be used for product storage. •



S. Kuzma (above right), of General Chemical Div., Allied Chemical Co., is congratulated by Paul H. Paulsen (above left), of the William H. McGee Co. on his winning the Jackson Award for Best of Show. His entry was liquid shipper shown below



North American Aviation's K. D. Miller placed first in Military Packaging Div.



## Highlights of SPHE's annual competition

National competition focuses attention on building engineered package and handling system to meet industry's needs

The Society of Packaging and Handling Engineers held its 1960 National Packaging Competition in connection with the Western Packaging and Material Handling Show. First prizes were awarded in seven divisions, the presentations being made by President C. L. Lippman at a special banquet. This year's competition was administered by the Southern California Chapter. Paul Franklin, of North American Aviation, was the competition chairman. A report on the keynote address, delivered by Maj. Gen. Dan F. Callahan, USAF, commander, Mobile Air Materiel Area, appears on Page 47. On this and the following pages are some of the most interesting containers on display. •

(Please Turn Page)

First place in the General Packaging Div. was won by this entry of A. G. Lynn, of Eitel-McCullough, San Carlos, Calif.

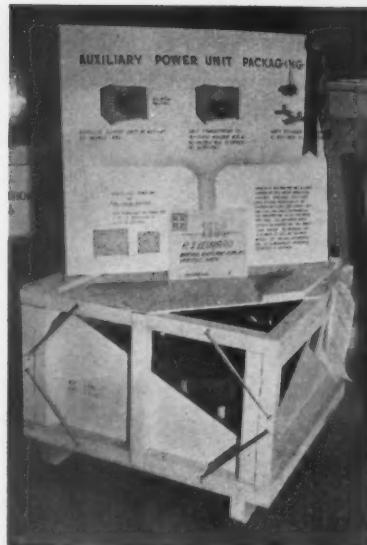


## ... Annual competition

(Continued from Preceding Page)



Left: Wilbur Couch is shown with his container for glass, first prize winner in the fiberboard class. He works for GM Truck & Coach



Right: In Cleated Box Div., first place was won by R. S. Leonard, of Boeing, for this container. It carries an auxiliary power unit



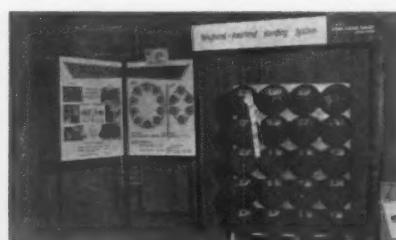
An assortment of handling aids and devices won the first place award in the Materials Handling Div. It was entered by G. A. Peters, of the Autonetics Div. of North American Aviation, Inc.



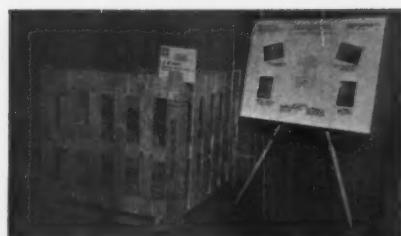
A floating platform container took top prize in the Nailed Wood Box Div. Its designer is A. Bonin, of Norair Div., of the Northrop Corp.



Combination shipping and storage cabinet for parts was entered by D. E. Wilber, of General Electric, in the Handling Div.



This palletized handling system was entered by C. R. Hanam, of Hughes Aircraft. It won third prize in Materials Handling Div.



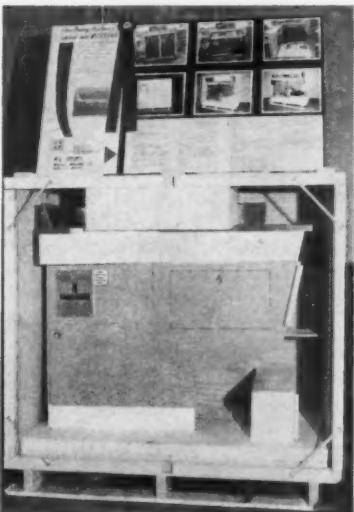
Used by the Geneva Metal Wheel Co., this collapsible pallet crate was entered by A. W. Ford. It interlocks in stack



A. G. Siebert entered this shipping container in the competition, which was held in conjunction with the Western Packaging and Materials Handling Show. He is with Otis Co.



A new approach to piggy-back tie-down is this method developed by W. E. Cole, of Norton Air Force Base. This tie-down passes over tires rather than holding body



This airplane galley handling container was entered by R. L. Drews in the MH Div. Drews designed it for the Boeing Airplane Co., Seattle

Maj. Gen. Callahan, at the SPHE awards banquet, calls management attention to growing import of handling and packaging.



## Banquet speaker urges scientific packaging

A TOP Air Force general, speaking at the Awards Banquet of the Society of Packaging and Handling Engineers, urged the application of scientific engineering principles to packaging.

Maj. Gen. Dan F. Callahan also urged management to place increased emphasis on the packaging engineering and materials handling areas.

Everybody wants items protected by packaging with the minimums—minimum weight, minimum cube, minimum cost, the speaker said. Excessive packaging is just as bad as inadequate packaging, but is harder to spot since breakage and damage reports do not point it out.

There are three basic factors in developing optimum packaging at minimum costs. These are "(1) what you're designing for, (2) designing against, and (3) designing with."

Explaining "designing for," he said that the engineer needs to know almost as much about the item as the man who designed it. This includes its nature, what it's made of, its inherent strength, its vulnerability to shock, vibration, abrasion, moisture, temperature, etc.

Under "packaging against," he pointed out that it is not al-

ways possible to predict the handling and storage conditions which your package must withstand.

"Packaging with" involves new techniques and materials. Almost daily, Callahan said, I see or hear of packaging innovations and break-throughs.

Speaking of the problems which the Air Force experiences in transporting easily damaged weapons, Callahan said, "you must examine the problems peculiar to packaging, handling, and transportation to assure us the utmost in reliability. You can help us deliver a more reliable product by giving these problems your attention from drawing board to the finishing line—build into the item a reasonable number of insurance features . . ."

The speaker listed four challenges waiting the attention of the industry. One is a new method of determining the fragility of a product. Second is a packaging method better than wrapping in layers of soft metal for the shielding of magnetron tubes for air shipment.

Third is greater reliability and consistency in instrumentation for computing vibrations and rough handling. And fourth is a new protective coating to cut the costs of cocooning. •

# A down-under look at transportation

**Australia's transportation system works under the stern grip of the government; here's what the Transport Regulations Acts have done in 25 years**

THE DOMINANT factor in contemplating land transport and related public policies since the advent of the motor vehicle has been the inability of railway systems to pay their way. Also the presence of recurring railway deficits of large proportions in all state budgets in recent years.

Constant endeavor by the Railways Commissioners to retain existing traffic and regain traffic from the road competitor has never been more intense than it is today. Actually this condition is by no means confined to the states of Australia. Universally, railway systems are battling, against what appear to be almost insuperable difficulties, to fill the gap between actual usage and full capacity.

In Victoria, this Board is still constantly arbitrating between the extreme arguments presented by the Railway representative (based on the contention that all traffic which rail can conceivably carry should be conserved to the railway as a matter of community interest) and the alternative arguments advanced by road interests and by transport users for freedom of choice between the two land transport systems.

The Transport Regulations Acts have now been in force for 25 years. Although they have been amended from time to time, they are still basically in the same form as when the original Act was

passed. One major incident in the intervening period occurred in 1954. Then, as a result of Constitutional decisions, interstate road transport became completely free from the provisions of regulatory systems introduced under state law.

The latter occurrence brought into being Part II of the Commercial Goods Vehicles Act, providing for "contributions to road maintenance." In other words: payment of special fees in relation to heavy vehicles whether operating intra- or interstate.

## Maintenance Fees

These fees being designed to cover road wear and to contribute to maintenance of roads used by such vehicles. Close to £5 million has been collected by the Board up to June 30, 1959. It has been made available to the Country Roads Board to assist in maintaining roads throughout the state.

We have on a number of occasions recorded the basic belief that the purpose of the Transport Regulation Acts from the outset was to gradualize the advent of the heavy motor vehicle. If its development were completely unregulated, it would have entered a transportation field which, hitherto, particularly in this country on long haul, had virtually been on rail-

way lines. This would have created a chaotic condition with serious economic implications. Indeed it must be assumed that this was the universal view as, in all advanced communities, comparable steps were taken in substantially the same period of time. Our concept always has been that regulation sought a controlled evolution rather than to impose arbitrary restrictions of a permanent nature.

At the same time, we have also said that it is understandable that policies would be more restrictive in Australia than in older, more densely populated and more highly developed countries. Here, in the state of development which existed in the 1930's when this whole thing occurred, the sparseness of population and related economic development meant that only comparatively light traffics were available to divide between the alternative transport media. More restrictive policies than would be applicable in highly developed communities were inevitable.

We also hold the related view that, as economic development proceeds, progressively there should be more opportunity to use road transport as an alternative medium for purposes for which it is more readily adaptable.

Many observers express surprise when they come to study the considerable "freedom" road transport has gained in this state already, i.e., beyond the statutory freedoms of 25 miles in Melbourne and the three urban centers and 20 miles elsewhere in the state. These further freedoms can be summarized the following way.

A. Ancillary users with their own vehicles, not exceeding 80 cwt load capacity, may carry their own goods within a 50 mile radius of their place of business.

B. Primary producers as ancillary users, i.e., carrying their own goods only may own and use vehicles of any size to operate throughout the state. Thus, a primary producer may carry his own wool and other produce to Geelong or Melbourne, and carry back any of his requirements without restriction.

C. A license is obtainable "as  
(Please Turn to Page 74)

EDITOR'S NOTE: The material for this article was excerpted from the Annual Report of the Transport Regulation Board of Australia directed to the minister of transport. It refers to the year ended June 30, 1959.

BETTER control and lower shipping paperwork costs are in the offing for motor transport shippers from coast to coast who use this new bill of lading-freight bill system.

The pilot installation is at Consolidated Freightways. It was devised by Standard Register Co. Usually the bill of lading, made out in triplicate by the shipper, with one copy for the consignee, another for the carrier, and the third for himself, is recopied in the carrier's terminal. Not only is this slow and costly, but it allows an error factor which in some instances has exceeded 25 per cent. In addition to the difficulties arising from occasional misshipment, there is the added chore for the shipper of matching the freight bills he receives against the bills of lading he wrote.

The new Consolidated system revolves around two pieces of equipment, a Multilith duplicator and an Addressograph machine. The duplicating machine is the system's heart. Its master is the second part of a redesigned three-part bill of lading set. The sets are supplied by the carrier or the shipper—depending upon a customer's needs. In the system's first step the shipper prepares the bill of lading. After the set is received by the shipper, the second copy, a special master form,

## Master plan for war on carrier paperwork

**Master form leads way for multiple error-proof copies of form which takes the place of bills of lading and the freight bill; a new cost-cutter**

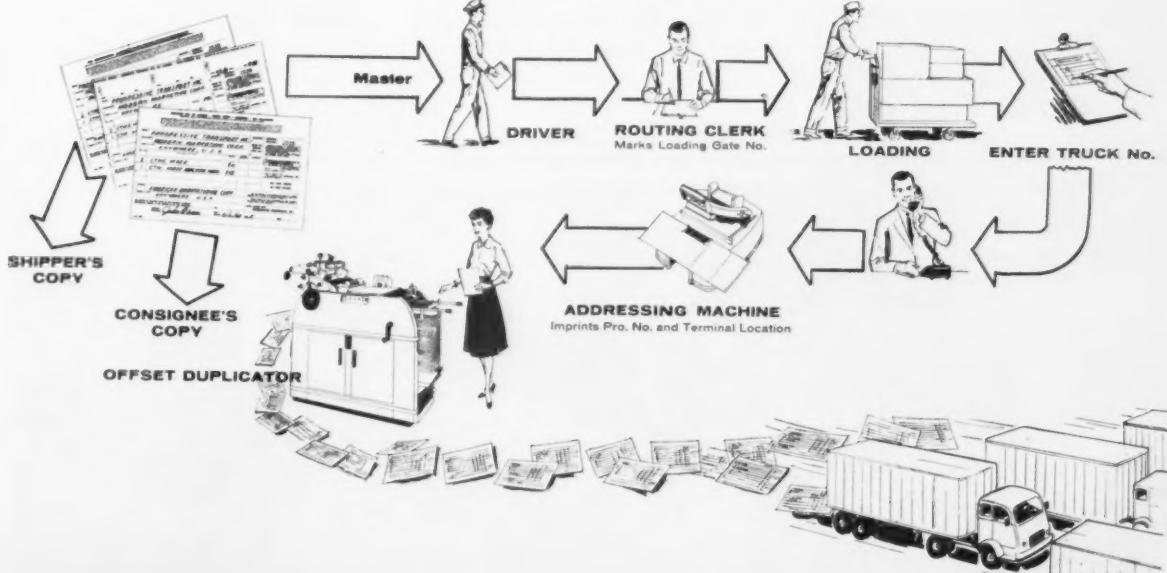
is given to the driver and accompanies the shipment. The first and third copies of the set are distributed.

The truck driver returns to his terminal with the goods to be shipped. The routing clerk writes the outbound loading door location directly on the duplicating master with a non-reproducing pencil. (The marking will not appear on the finished freight bill copies.) Then the driver picks up his clipboard of masters, now marked with the loading door location, and unloads his truck.

The masters which accompany each shipment are inserted in the holder on the dragline cart. The cart is moved to the correct dock location and the merchandise is loaded into the outgoing trailer.

After the goods have been loaded, the trailer number is recorded on the master. This marking will appear on finished freight bill copies with no possibility of transcription errors. The master is next sent by runner or pneumatic tube to the billing office for rating and extension by the rate clerk.

(Please Turn to Page 75)



# Is the man behind the wheel

As developments with the electronic highway progress, driverless trucks get

A SOLUTION has been proposed to cope with the 70 million motor vehicles traveling our nation's highways. By 1970, motor vehicles may be traveling a predicted one trillion miles per year over electronic highways.

## Two In Pie

The system, still in the laboratory stage, is being coordinated by the Radio Corporation of America and General Motors Corp. The biggest problem to be met is reliability. Both GMC and RCA feel that the system will bring about increased highway capacity by spacing vehicles, reduce driver effort, and improve safety through elimination of error—the cause of 95 per cent of the accidents today.

Unicontrol is one part of the system. With it, a lever regulates a vehicle's speed and direction. When the stick is moved to the left or right, electrical signals are produced which position the wheels to the left or right through electro-

hydraulic servos. Lever movement fore or aft accelerates or brakes.

Another vehicle employed in recent tests uses a potentiometer to position front wheels through a servo. This automatically guided vehicle utilizes an electromagnetic path down the center of the road. The deviation of the vehicle from this path is sensed by two pickup coils tuned to the road frequency. The coils are attached to the front bumper. Using two coils in opposition provides the necessary sense of direction as well as the magnitude of the error.

The present system includes means of detecting obstacles and regulating car direction and speed. Corollary projects include a HyCom system for low frequency communications which would give the driver audible road and emergency information through a special unit or regular vehicle radio—from roadside transmitters. A warning system using low frequency impulses lets the driver know when

he is veering too close to a pavement's edge.

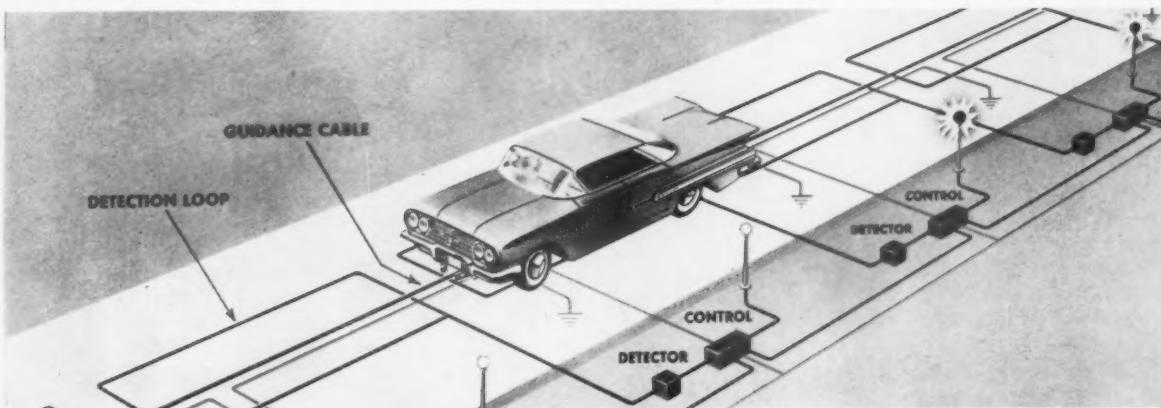
## Driver Function Split

In this electronic highway system, the driver functions are divided between vehicle and road. The guidance cable defines the desired path; errors are sensed by the vehicle. A computer in the vehicle determines front-wheel angles required for correcting the error. The computer takes into account a vehicle's dynamic behavior.

An electro-hydraulic servo provides motor effort required. Thus, in steering, the path sensing function is split between road and vehicle, but the decision and motor functions are based in the vehicle. Speed or spacing control is similarly divided. Road equipment senses location of all vehicles on the controlled road and transmits range information.

A computer in the vehicle determines the minimum safe spacing, using this range data coupled with

Diagram of a section of the electronic highway shows circuits buried beneath pavement. Elements include series of car-length rectangular wire loops, continuous guidance cable, and a chain of transistorized detector circuits linked to the buried loops



# behind?

closer to reality

rate of change of range and the trailing car velocity. The computer produces electrical signals to actuate the brake and throttle for safe, smooth control. And since road conditions affect minimum safe spacing, the computer is designed to accept road friction information—either from the driver or the vehicle or from external signals. It is designed to distinguish between wet and dry pavement and change the spacing equation accordingly.

Electronic components in the vehicle control are installed in the luggage area. They operate from a conventional 12-volt electrical system. Mechanical components, including hydraulic power supply, servo valves, and actuators are in the engine compartment.

With automatic speed control, the desired speed may be set by the driver or by a command signal from the road. In both cases, when another vehicle is approached from the rear (this lead vehicle needs no special equipment), the system



Control circuits are installed which pick up signals generated in road by passing car. They are converted to control signals, perform various functions

automatically switches to automatic spacing. The safe spacing is computed by the trailing vehicle, which then stops or slows until the desired spacing is attained. The driver in the trailing vehicle, at this point, has the option of following the lead vehicle at a safe distance or switching over to manual control and passing it.

If information signals are lost for any reason, the vehicle automatically comes to a complete stop. The system is not destined only for the highways. RCA believes that it is feasible to design an almost completely automatic warehouse with provision for collecting material from storage and loading it upon trucks in accordance with a program prepared in advance and fed to the system.

tions which now require more complex equipment. Also the possibility of evolving a full-scale system compatible in its ability to accommodate both equipped and unequipped vehicles. •



## Experimental Control

Engineers at the New York Port Authority are using detectors in experimental traffic control problems at both the Lincoln and Holland Tunnels. One can think of automatic freight roads—on pavement or rails—with loaded trucks started at a marshalling yard and guided automatically to a destination chosen in advance and programmed into the system.

Some of these, of course, are prospects for a more distant future. The main point is the immediate applicability of this system for the economical and efficient performance of limited traffic func-

Pickup coils transmit signals from road to vehicle; others are beneath

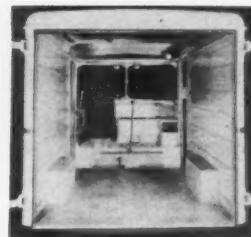




Volvo L495 diesel 185-hp tractor with 32-ft tandem flatbed trailer with two



Fruehauf's vertical side bottom hopper equipped with Windrow-type gates, available in light metals



Load space on White PDG is planned for parallel loading



Reo has 10 diesels with gvw ratings of 31,000 to 60,000 lb

## New truck and trailer trends

Diesels without exhaust stacks, extruded aluminum tank trailers, multi-stop trucks, open-top trailers are part of this report about what's new on wheels



International's Metro walk-in cab is one of two multi-stop chassis rated at 21,000 lb gvw

**DIESEL TRACTORS** and trucks without exhaust stacks, aluminum chassis that are 405 lb less in weight, and several pickup trucks highlight new developments in the trucking industry.

### Diesels Galore

Dodge and Volvo lead off developments in the diesel field. The Swedish firm of Volvo is currently introducing its L495 diesel, 185-hp tractor. During manufacture, Volvo diesels are statically and dynamically balanced and endowed with a direct injection combustion system which cuts exhaust

to a minimum and makes exhaust stacks unnecessary.

Volvo diesels are fitted with exhaust brakes. The brake closes off the exhaust system to build up back pressure in the engine. Compression is increased and the engine is slowed enough to act as an efficient down-hill holdback.

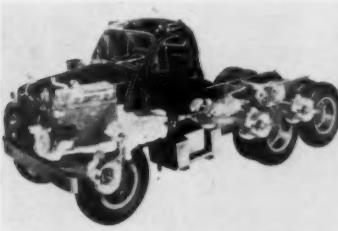
Featured on many of the new Dodge diesels is a sleeper cab 75-in. wide. It adds 22 in. to the 89 $\frac{3}{4}$ -in. BBC dimension on cab-forward models. A large lockable storage space under the berth provides 18 cu ft for tools, luggage, packages.

A trend toward use of alumi-

num in tractors is strengthened by Mack Trucks, Inc., whose "Aluminum-light" series of diesel tractors offers chassis weight reduction up to 405 lb over the same standard model. Six-wheel tractors in the B range are rated at 72,000 lb gross combination weight as are the H models, specially designed for long-distance work with high-cube trailers.

Reo is introducing a new conventional line of diesel-powered tractors which includes 10 tractors with gross vehicle weights from 31,000 to 60,000 lb with single and tandem axles. The Cummins diesel engines used in the

Aluminum has been used extensively by Mack in new six-wheel tractors



New tilt-cab diesel from Diamond T tilts manually, quickly



Maneuverable Junior Van from GMC has 98-in. wheelbase and 243-cu ft maximum payload area

Unitized design principle by Trailmobile shown in tank trailer



All-steel, vertical panel van body is by Unisteel, roof skin is reinforced



Truck by Studebaker has dished steering wheel, two-piece sliding rear window pane



Tandem trailer by Highway uses special converters for waterproof hauls with open-top

line are six cylinder, valve-in-head types. Aluminum is used in the flywheel housing, timing gear cover, oil pan. Rear axles range from 23,000 to 50,000 lb capacities.

Walk-in accessibility is a feature of the tilt-cab diesels produced by Diamond T. They tilt manually. A hand-operated hydraulic pump raises the aluminum and fiberglass cab to 45 deg full-open position. The vehicle can be serviced with oil and water through an access door in the engine housing without tilting. A number of options in major components enable Diamond T to custom-build every model in the

series to fill customer needs.

#### Bottom Dump Trailer

If moving dry bulk materials is your business, you'll be interested in Fruehauf's bottom dump trailers. Steel, aluminum, and stainless steel are the metals available. Hopper walls serve as part of the load-carrying structure as well as the sides of the cargo space, providing a minimum of body weight. With the closed unit, side walls continue over the top. Loading is accomplished through three 20-in. hatches.

The open-top model is available with single axle and tandem sus-



First sleeper offered by Dodge on its new cab-forward diesel trucks

pensions and can carry from 10 to 30 cu yd loads of sand, gravel, cinders, etc.

#### Multi-Stop Trucks

Several new small trucks deserve the attention of anyone who makes short haul deliveries. Studebaker, White, International, and

(Please Turn to Page 75)



Cartons accumulate at assembly area of automatic warehouse. Operator (center) inserts the cards

## Cards pick cartons at 50-per-minute rate

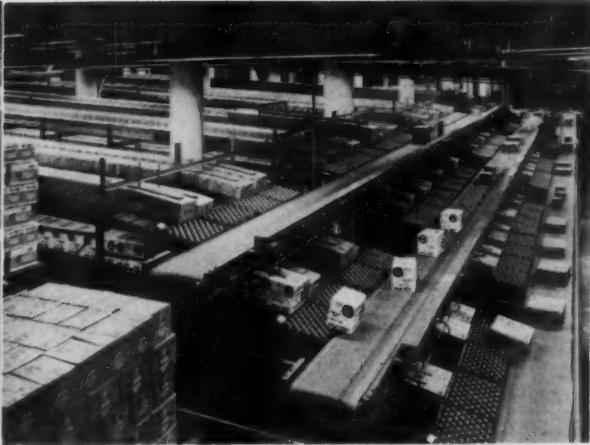
Fast movers, picked by punched cards, are coordinated with slow items that are hand-picked in this new warehouse for toilet articles . . .

CUSTOMERS from Chicago to Texas are receiving shipments faster through a new punched-card automatic warehouse opened recently by Colgate-Palmolive Co. in Kansas City, Kans.

From this giant distribution center, toilet-article orders are filled electronically for customers throughout the Midwest. Speed and accuracy of order picking has



**Card reader (front) transmits orders to control panel (background), starting cartons on Alvey-Ferguson conveyor**



**System handles a variety of carton sizes. Normal changes in sizes can be made without alteration of the equipment**

been improved. Closer control is exercised over inventory. The safety factor in handling has been improved. On top of all this, the company is saving money.

Control of the order-picking operation has been designed to be compatible with the existing punched-card billing and inventory control in use by Colgate-Palmolive Co. The result is a distribution center with the information flow totally coordinated for all basic warehousing functions.

The huge automatic order-picking system consists of live storage racks and conveyors. It is equipped with an electronic director and control system.

The electronic control automatically reads, sorts, and memorizes

orders at a rate of 100 cards per minute. It scans an average order in about 10 seconds. Cartons are picked from the racks at the rate of 50 per minute or even faster. These are the two determining time factors which result in a total dispatching cycle of about one minute for the average order. Current demand calls for picking an average of 9000 cartons a day.

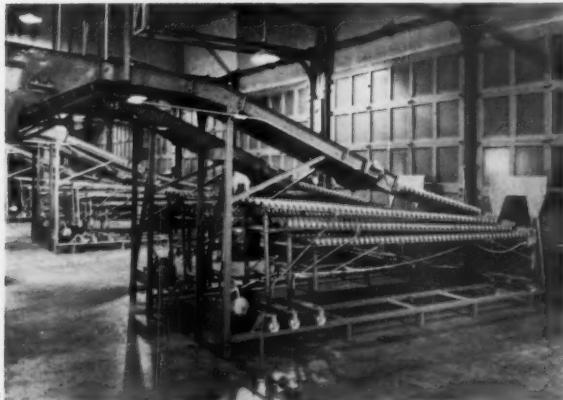
In the beginning, Colgate's many items were classified by demand. This analysis resulted in a three-part system. The 72 most active items are selected through the main system. Another 130 slower-moving items are picked manually from live storage racks. Very slow items—35 in number—are stored on shelves. This results in 80 per

cent of all volume being picked automatically; 20 per cent by hand. This decision was made, of course, for economic reasons. Slow-moving items do not justify automatic picking, active items do. The two picking methods are closely co-ordinated through an ingenious and simple procedure that times the two operations and prevents delay.

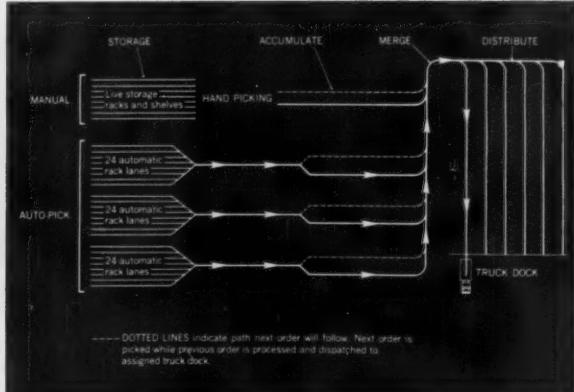
A set of punched cards is prepared for each order. This represents the part of the order to be selected from the main racks. Each card may call for 1 to 99 cases of a product. A maximum order would consist of 72 cards, each representing a different product. An "end-of-order" card is placed on

(Please Turn to Page 105)

**Telescoping conveyor sections extend the six branch-line conveyors into trucks and trailers for rapid loading**



**The automatic warehouse system for the fast-moving items is used in combination with hand picking of slow items**



# Driver school on wheels

**HHG drivers get special training and safety tests in this big orange schoolhouse on wheels, a moving van equipped with all the facilities of a classroom to teach new methods**



A vision tester for checking near and long-distance vision is used to administer a thorough checkup on Allied Van Lines drivers. The fully-equipped classroom is contained inside a specially-made moving van. Its purpose is to train Allied Van Lines personnel in the latest techniques for moving household goods without incident. The classroom is equipped with a variety of samples of crates, cartons, trucks, dollies, pads, slings, and even carries its own motion-picture equipment to amply illustrate all techniques.



A special reaction-time tester is employed by Allied Van Lines instructor to ascertain the time between danger signal and braking. Special electronic equipment is used to test driver vision also. ICC regulations and traffic and safety laws impress deeper through such methods. School van is stopping at all cities, which have an Allied agent, to improve service

**A CLASSROOM-on-wheels program for moving and warehouse personnel is bringing nationwide results to this central state-based household goods moving company.**

Allied Van Lines, Inc., has equipped a 35-ft van as a big orange schoolhouse, which is traveling from city to city to bring the latest in testing and training to its agents.

The driver of the van is an experienced mover who has been especially trained as an instructor. He conducts classes in loading, packing, unloading, crating, handling of antiques and fragile items, customer relations, and highway safety.

The van classroom is equipped with samples of crates, cartons, trucks, dollies, pads, slings, and carries its own motion-picture projector, sound equipment, slide projector, desks, chairs, and work-tables. •

The big orange schoolhouse on wheels for Allied Van Lines movers and their driver-foremen is a mobile classroom which stops in cities to present special refresher training courses in handling of household goods, customer relations, and highway safety. It's a new customer relations service.





Photo courtesy of St. Petersburg Times

## *Handled with Clark ingenuity...and care!*

Maybe you handle cartoned goods, or steel coils, or food in glass bottles, instead of rolls of paper. But the same important factor of *correct application engineering* is vital regardless of what you handle.

Take these paper rolls as an example. Industry needed a faster, safer, *damage-free* handling method. After a thorough study of all available techniques and equipment, Clark engineers developed the *ideal* paper roll clamp...one that provided every possible needed feature.

But Clark application engineering goes *beyond* special product design. It goes as far as specifically fitting the correct materials handling vehicle to your specific type of operation. It assures

you of the right type of truck, in the correct capacity and power type, equipped with the right accessories and attachments. The end result is the ultimate in operating efficiency, at lowest possible cost.

We think we can help you through our application engineering. A call to your local Clark dealer (listed in the Yellow Pages) or a letter to the factory is all that's necessary to initiate action. If you care to write, address: Application Engineering, Clark Equipment Co., Battle Creek, Michigan.

**CLARK®  
EQUIPMENT**

For full details, circle 77 on reader service card

## You can get more out of each day

Are you the man who always gets his work done and has time for developing new projects. If not these rules may help you

"HOW DOES he do it? There goes Sam Smith out to play golf again. He does more business than I and is a lot more successful yet I'm knocking myself out all day every day. He must have some magic formula!"

Is there a magic formula? Sam certainly uses no magic but he does have a formula. That formula he has developed to enable not only himself but every man on his staff to get more out of each day than do competitors. It's as simple as that.

There's probably not a single reader of these pages whether he is an executive or some other individual in the firm who hasn't envied the Sam Smith's of the business world. What these men have done to get more out of each day is certainly not secret. The "formula" is made up of some very simple and easy-to-follow steps. Here they are.

- Concentrate on essentials and eliminate frills. Separating the molehills from the mountains, as one expert puts it, is an essential step. In many cases we can delegate the "frills" to someone else and in others we can eliminate them completely. Getting at the heart of a business problem immediately is a certain way to find the quickest solution with minimum effort. The best of all procedures is to start with a very brief ex-

amination. The purpose of this is solely to separate the essential from the non-essential. Then all of our thinking or physical effort should be concentrated on the former.

This disposes of every problem in the shortest possible time. It conserves energy for more important tasks. It makes more time available for the subsequent problems we must handle during each business day.

- Group similar tasks so that specialized work can be done in one sitting. There are basic things we must do in handling each job. If we can use the time and effort in setting up these basic steps for a group of ten projects or jobs rather than doing so for each of the ten individually, we are making top progress.

This can be applied not only to executive tasks; it also can bear profitable results in every phase of operations.

- Accumulate little things into a single group. Little things are always expensive time killers. It takes so many minutes to organize and get set whether we go through the process one time or ten times. If we devote such setting-up routines to every little procedure in our business day, available time escapes without our ever realizing how costly it becomes.

- Save up on work or procedures

that require no concentration. Do the same thing with those parts of a major task which are pure routine and require no decision making. Setting these aside for slack periods during the day or when we need mental relaxation not only increases our efficiency but actually gets the big job done in much less time. Taking those periods of mental relaxation frequently during the day is most essential toward getting more done in that period. This is one sure way of doing so.

- Have definite stopping places. The first thing a professional athlete must learn is to pace himself. The same thing applies to everyone from the executive down to the newest man on the staff. Providing a number of definite stopping places during each day for complete relaxation always results in our having a much larger group of accomplishments therein.

- Make waiting time productive time. We have to rest and relax if we want to accomplish anything at all. These periods when we must wait for something to be done by someone else, for the answer to a telephone call, for a secretary to dig up information out of the files, etc., can all be put to productive use. They enable any executive to secure more from each day.

- Cut down searching time. That's another executive waster. If what we are doing has to wait until we or someone else must hunt around and locate something needed, whether material or information, that part of the day is certainly non-productive. Add a number of these together and they leap from minutes for each one to wasted hours for the total group. Making certain that everything is so well organized such searching time is reduced to seconds removes this time waster.

- Reduce back tracking. That's a great time waster in every business. It can be applied right down to the actions of every individual employee. More planning of work in sequence is the surest way to avoid this waste.

- Change tasks about every two hours. This will lessen boredom

and fatigue. Try doing the same thing all morning or all through the day and one will realize how time wasting this can be. It's a good lesson to apply not only in executive posts but for every individual on the payroll as well. Boredom and fatigue throughout a working day make the last quarter of the day inefficient. Remove them in the first three quarters of the day and a full productive eight hours invariably results.

Some times the nature of the work to be done or even the job one is handling make this impossible. There's a solution even then and it's an easy one to follow—just change the tempo of your work. Move a little faster or a little slower for a few moments from time to time. It will invariably lick that boredom time waster.

- Alternate the hard and easy tasks. We cannot work at top efficiency all of the time. The man who says he can is kidding someone—often it's chiefly himself. By setting up the day's working schedule so that hard and easy tasks are handled in turn rather than grouped with one another, we go home in the evening with much more accomplished AND possessing a much better disposition for the family at home!

- Start the difficult or disliked tasks first. The more we put them off the more energy it will take (and the more time as well) to handle them. We're most capable, too, of tackling them first thing each morning when mind and body are freshest. Nothing hangs over one's head or hurts one more than to keep putting off such a difficult or disliked task. Not only does it become more impossible to handle as time goes along but its mere presence reduces one's efficiency in handling other things. It makes even the simpler procedures consume more time and energy than they normally would.

- Cut down on muscular tension. Stay free and easy. Work loosely and without tense muscles. Look what they do to your golf game! They are equally injurious to working procedures.

- Avoid work interruptions. Finish one task before you tackle another. ●



To boost efficiency, the Post Office Department has equipped several of its trailers with electric powered movable floor systems by H. S. Watson Co.

## Mail handling gets boost from in-truck system

**E**QUALLY as conscious of costs as is private business, the Post Office Department recently installed electric powered movable floors in some of its van trailers operating in Washington, D. C.

The Post Office has found that the specially-equipped trailers are useful in situations where dock space is critical and reduction of handling time is essential. According to the department, loading or unloading time has been reduced from approximately four hours to less than one hour per load under congested conditions. The apparatus is also used on suburban runs to good advantage where partial loading and unloading is required.

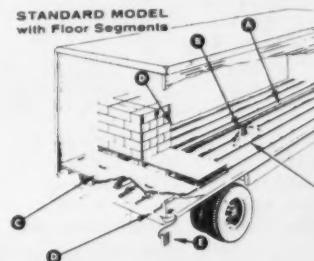
Another unit employed by the department handles bum bags. They are mail sacks stuffed with used sacks destined for repair and reuse. On a test run, 196 bum bags were loaded and unloaded in a 32-ft trailer. After this was accomplished three times, there was an estimated saving of 3.5 miles of walking inside the trailer.

Notice the drawing in the lower right corner. It allows a

detailed description of how the apparatus functions. The roller chain (A) powered by reversible electric motor-driven worm geared power unit (B). Movable floor segments (C) engage the chain and roll forward or backward on nylon bearing aluminum wheels. They travel in six special extruded aluminum wheel tracks (D) mounted on trailer floor.

The conveyor is operated by plug-in forward-reverse push button control (E). There is a safety limit switch at head end of the body which automatically stops the load. ●

This system can be installed in new and existing van trucks or trailers. Forward and reverse movement available via button



# DA

# NEW PRODUCTS

.... FOR FURTHER INFORMATION

## Stacking Pallets

Irregular shaped products are now tiered, transported in groups, or stored easily with the new stack-on pallet made by Johnson-Flaherty. This new product has demountable

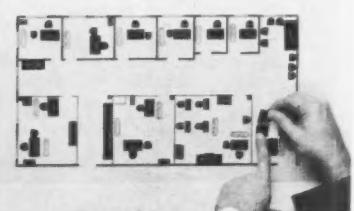


legs that are double braced for extra rugged construction and comes in various lengths for stacking at different heights. Available in two sizes 42 x 60 in. and 42 x 48 in., they have a capacity of 4000 lb.

Circle 25 on Card Facing Page 74

## Office Layout Kit

Planoramics, Inc., has prepared an office layout kit, scaled  $\frac{1}{8}$  in. to 1 ft. Ideal for planning future office expansion, this kit allows the space planner complete freedom in plotting



areas of any size and shape. It consists of a 20 x 50 in. plastic planning board with grid, a marking pencil, tape, and symbols for every type of office furniture and equipment.

Circle 26 on Card, Facing Page 74

## Joint Sealer

The United States Chemical Co., Inc., has developed a rubber asphalt joint sealer and crack filler which bonds well to concrete, steel, masonry,



and other surfaces and remains flexible over a long period of time. This sealer is sold in a standard tube which fits ordinary caulking guns.

Circle 27 on Card, Facing Page 74

## Emergency Lantern

A battery-operated, automatic emergency light which goes on the instant electrical power fails has been introduced by Burgess Battery Co. This new light plugs into any standard 110 volt, 60 cycle alternating current outlet. It turns on the lantern

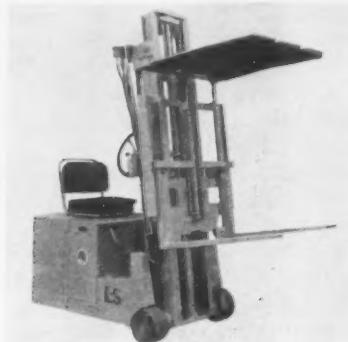


if the AC power fails, providing strong lighting at any desired location. The lantern features two six-volt batteries wired in parallel. This double power pack can operate continuously for 15 hours. It has a year's shelf life.

Circle 28 on Card, Facing Page 74

## Load Stabilizer Attachment

Lewis-Shepard Products, Inc., offers a load stabilizer attachment designed for handling all types of loads that cannot be nested or tied together. The stabilizer consists of three independent, articulated contact plates which provide even distribution of

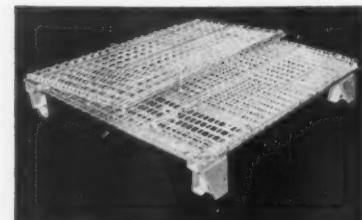


clamping force over a 34 in. square area. The stabilizer has a vertical stroke of 24 in., ranging from a minimum opening of 40 in. above the forks to a 64 in. maximum. Three sponge rubber lined pads hold the loads even when tilted outward to 11 deg.

Circle 29 on Card, Facing Page 74

## Collapsible Wire Box

Collapsible wire mesh boxes for shipping or warehouse storage are now available from Republic Steel Corp., Berger Division. These boxes,



which fold to pallet height for easy storage, have capacities of either 2000 or 4000 lb. Heavy-duty, non-slip locks are provided so that sides cannot accidentally open.

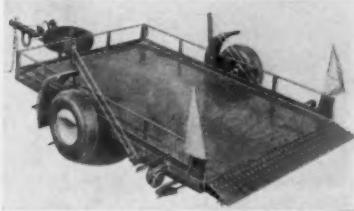
Circle 30 on Card, Facing Page 74

# and EQUIPMENT

PLEASE USE READERS' SERVICE CARD . . PAGE 74

## Elevator-Type Trailer

Production of a flatbed utility trailer with patented rubber spring torsion axle providing separate wheel suspension has been announced by The Demotraile Co. The elevator feature permits quick and easy loading

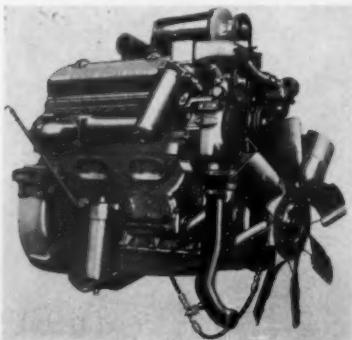


at ground level. A platform surface patterned for traction, convenient tie-down rails, and an overall low center of gravity assures safety of operation at top highway speeds. Capacity is 1000 lb with a safe overload factor of 50 per cent. It is available in two sizes: 56 x 84 in. and 65 x 84 in.

Circle 31 on Card, Facing Page 74

## Diesel Truck Engine

A V-8 diesel truck engine has been added to the GMC Truck and Coach Div. line. The two-cycle 8V-71 diesel will be installed in three heavy-duty GMC tractor models. Only 45 in. long, these units are lighter and shorter

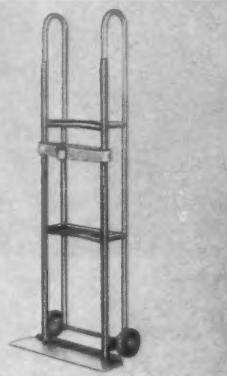


than similar capacity six-cylinder inline engines of four-cycle design. The two-cycle operation provides power on every piston downstroke, giving twice as many power impulses per minute as four-cycle diesels. Gross torque is 733 lb ft at 1200 rpm.

Circle 32 on Card, Facing Page 74

## Appliance Truck

Marketing a new appliance truck which provides damage-free handling of a variety of products is Nutting Truck and Caster Co. The unit is made

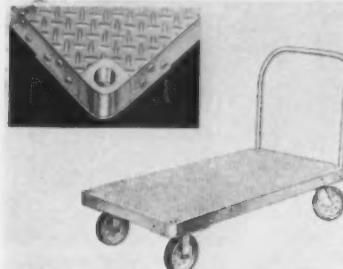


of hi-tensile tubular steel frames braced and welded into a rigid, long-lasting truck. Non-marking plastic tubing covers the entire front of the frame. A heavy-duty web strap with a slip-proof buckle is included. The overall width is 23% in., overall height is 60 in., approximate weight is 35 lb, and its capacity is 400 lb.

Circle 33 on Card, Facing Page 74

## Heavy-Duty Platform Truck

This new heavy-duty series of platform trucks features universal caster mounting plates and safety tread plate decks. The new trucks made by

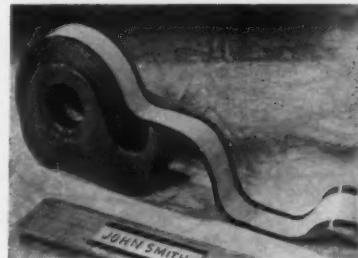


Magline Inc. are offered in 1000 and 1200 lb capacities, and in 10 standard sizes ranging from 24 x 36 in. to 36 x 72 in.

Circle 34 on Card, Facing Page 74

## Pressure-Sensitive Tape

This new tape can be used for anything that needs a permanent or temporary label. It sticks to any clean dry surface and is unaffected by temperatures ranging from 160

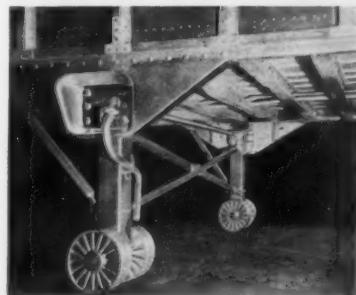


deg F to as low as 40 deg below zero. Made by Tapemark Co. it is available in four different colors, red, blue, green or black and in four regular widths of  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$  and 1 in. It can be marked by pen, pencil, or typewriter.

Circle 35 on Card, Facing Page 74

## Trailer Landing Gear

New two-speed square leg supports designed for fast operation, extra strength, and protection against leg rotation and side stress, are now available as standard trailer equipment, according to the Fruehauf Trailer Co.



These supports are easier to operate in both high and low gear because the crankshafts and gearshafts are all mounted on bronze bushings. When lifted and lowered, they cannot spin on one another because their shape is positive protection against leg rotation.

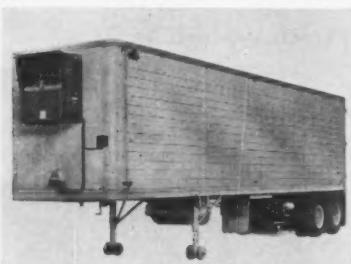
Circle 36 on Card, Facing Page 74  
*(Please Turn Page)*

## New Products and Equipment

(Continued from Preceding Page)

### Truck Refrigeration Unit

American Manufacturing Co., Inc., is introducing a new line of all-electric, hermetic-design refrigeration systems for truck-trailers. The system consists of a hermetically-sealed refrigeration unit with a gasoline, LP gas, or diesel power unit which pro-



vides a 230 volt, 3 phase, 60 cycle electrical supply source. This unit mounts through an opening in the upper front wall of the trailer. There is no over-hung weight to strain the trailer wall structure. The power unit is mounted under the trailer floor for better weight distribution and is connected to the refrigeration unit by a single cable.

Circle 37 on Card, Facing Page 74

### Pocket Radio

General Electric Communication Products Department has introduced an all-transistorized shirt-pocket message radio for use by administrative personnel and dock crews in transportation firms and warehouses. The equipment has miniaturized cir-



cuitry and weighs only 12 oz with battery. In trucking applications, it may be used to hear messages transmitted by a two-way radio dispatcher to the truck fleet or to those equipped with pocket receivers. Although power consumption is reduced, the device is said to have selectivity and sensitivity comparable to mobile radios many times heavier and larger.

Circle 38 on Card, Facing Page 74

### Polyethylene Jug

A non-breakable plastic finger-grip jug withstanding the corrosive action of acids and alkalis and unaffected by temperature extremes of hot and cold is being offered by Vantines, Inc.



These containers are available in three sizes, 64 oz ( $\frac{1}{2}$  gal), 128 oz (1 gal), and 160 oz (imperial gallon). Closures are of the 38-400 type in plastic or metal. These containers are easily labelled and can be filled with automatic machines.

Circle 39 on Card, Facing Page 74

### Telescopic Conveyor Boom

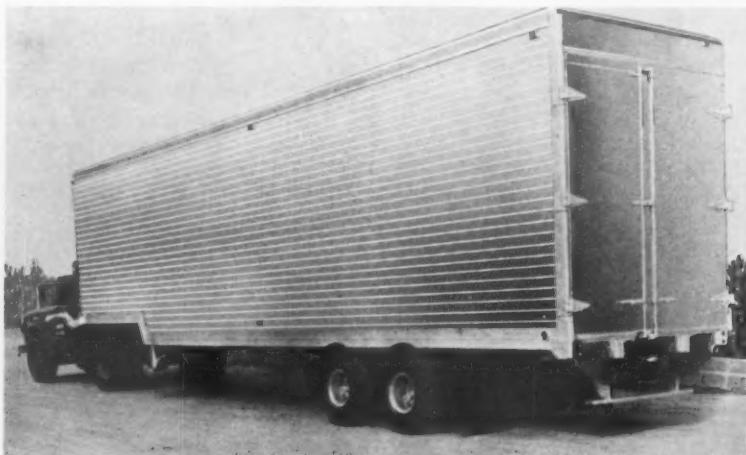
A conveyor equipped with a retractable boom which can be extended into the truck as loads are removed or withdrawn as packages are stacked forward is available from Samuel Olson Mfg. Co., Inc. This unit is easily



controlled by one man. A "dead man safety device" on the end prevents injury to the worker or to the parcels. Belt speed is variable with three ranges from 10 to 48 rpm. Telescopic units are available in widths from 18 to 48 in. and overall lengths, combining base and boom, from 33 $\frac{1}{2}$  to 57 $\frac{1}{2}$  ft.

Circle 40 on Card, Facing Page 74

### High-Cube Trailer



Miller Trailers, Inc., has introduced a new high-cube trailer without wheel boxes. This type trailer uses a reduced tire to eliminate space-consuming wheel housings which interfere with loading. The new model has 2637 cu ft of space in a 40-ft body. The model

has a 13-in. drop behind the fifth wheel, with a level floor to the rear door. Available in all steel, all aluminum, or composite steel and aluminum, it is offered in lengths of from 20 to 44 ft.

Circle 41 on Card, Facing Page 74

## Drum Support Bar

This unit designed to cradle standard 55-gal drums and allow for placement or removal by fork lift trucks is presented by Sturdi-Belt Material Handling Div., Union Asbestos &



Rubber Co. The new bar consists of a standard safety support beam, adapted for drums by welding of stops at the top of the flange. It can be attached to upright frames quickly and easily by means of a floating wedge lock that eliminates the need for tools.

Circle 42 on Card, Facing Page 74

## Light-Weight Truck

Renault, Inc. has introduced a new light-weight truck featuring forward control with front-wheel drive. Available in two models, both have a maxi-



mum payload of 1950 lb, over-all length of 161 in., and a turning radius of only 15 ft. These trucks are equipped with a four cylinder 32-hp engine.

Circle 43 on Card, Facing Page 74

## All-Weather Cab for Tractors

The D & M Truck Top Co. is offering a new cab for towing tractors made with a heavy steel roof and safety glass windshield with electric



windshield wiper. Clear vision is assured with unbreakable glass side and rear roll-up heavy-duty canvas curtains. Another feature is a two-way zipper for easy exit and entrance.

Circle 44 on Card, Facing Page 74

## Heavy-Duty Crane Scale

John Chatillon & Sons announces a new heavy-duty crane scale. Five models, 3, 5, 7½, 10, and 15 ton, all have an accuracy of 0.1 per cent of capacity. Because of this accuracy, the new Iso-Seal crane scale is approved for legal trade use. The crane is trouble free because there are no fluids to replace, and it doesn't need



oiling. The scale is easily read from a distance because of the large plainly marked dials. Tare can be adjusted to 25 per cent of capacity. A 360-deg safety, swivel-ball-bearing hook is standard.

Circle 45 on Card, Facing Page 74

## Light-Duty Truck

Seven service/utility bodies designed for light-duty trucks have been introduced by the Motor Truck Division of International Harvester Co. Greater strength and new styling are common to all new bodies. Heavy-duty corrugated steel floors, full-length drip mouldings, completely enclosed wheel housing, and double panel elec-



trically welded steel compartment doors are some of the new features. All bodies offer 48½ in. of unobstructed space between compartment sides. Conventional models are available in 79, 82½, 89, and 100-in. lengths. Enclosed models, with locking double rear doors, are offered in 82½, 89, and 100-in. lengths.

Circle 46 on Card, Facing Page 74

## Gripper Arms Attachment

Mult-purpose gripper arms made by Little Giant Products, Inc., handle unit loads of cartons, bales, crates, rolls, drums, and boxes without pallets. Steel arms support four re-



inforced rubber-faced plates which are protected by toe guards on the front edge. Shape-up bars prevent crushing of corner cartons. Camber is provided in both sets of arms to prevent sagging of the load. These gripper arms can be bolted to arm carriers of any hydraulic lift truck clamp.

Circle 47 on Card, Facing Page 74

## Tank Car Valve

The Bastian-Blessing Co. has designed a V-ring pressure seal valve for use on railroad tank cars transporting liquefied gases and a wide variety of chemicals. Wear and maintenance problems are reduced by the use of this new seal. A leak-proof stem seal is achieved through tank



pressure expanding the rings. This new valve has a forged steel body and bonnet and a stainless steel stem. The Teflon seat disc provides positive shut-off even against foreign material. As a safety measure, a vent valve may be installed in the valve body to permit bleeding of any accumulated pressure before removing the outlet plug.

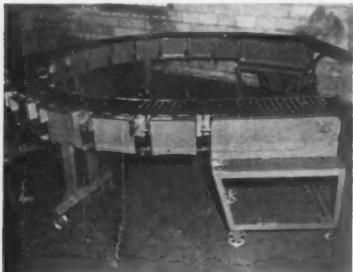
Circle 48 on Card, Facing Page 74

## New Products and Equipment

(Continued from Preceding Page)

### Flexible Conveyors

The R. T. Sheehan Co. announces a basic Flex-Bend conveyor with hinged receiving plate. It is available in 12 and 18-in. metal belt widths running 42 in. above the floor. It bends horizontally on a 5-ft and 6-ft inside belt radius. The flexible metal belt comes in 6-gage high-carbon



steel wire and is carried and guided by sealed grease packed ball-bearing rolls. An optional extra is a power stacker for bag stacking with push buttons attached to either end. It could be used for boxcar loading and unloading, warehousing, and general plant use.

Circle 49 on Card, Facing Page 74

### Oil Level Gage

The Sure Gauge & Lock Co. is manufacturing an oil-level gage which indicates the exact amount of oil present in the crankcase of any type



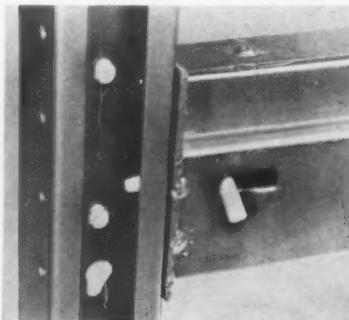
combustion engine. The gage operates effectively on engines with either 6 or 12-volt systems with transformers. It is easy to install and operate.

Circle 50 on Card, Facing Page 74

### Storage Rack System

Acme Steel Co. is offering a new storage rack system which can be installed without the use of tools. One of the features is a unique load-locking device consisting of a 7/16 in. low carbon, cold formed steel bolt. The bolt fits snugly into a round hold in the side of the column. Once locked into place the beam cannot be disengaged accidentally. The rack, made

of steel, is recommended for heavy-duty storage of materials on pallets or skids and for hand storage. Stock sizes of frames range in heights from

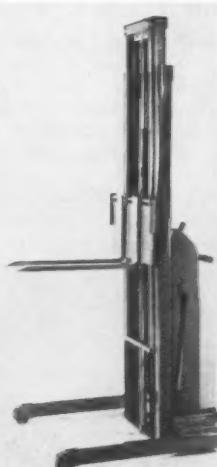


6 to 12 ft in 12 in. increments and in depths of 28, 32, 36, and 44 in. Beams are available in stock lengths of 42, 46, 54, 70, 82, 94, 106, and 120 in.

Circle 51 on Card, Facing Page 74

### Elevating Truck

A new line of 24 battery-powered portable elevating trucks has been introduced by American Pulley Co. Twelve of the models are rated for lifting 1500-lb loads that are up to 32-in. in length. The other 12 models feature 2000-lb load capacities and 24-in. load lengths. Design changes provide heavier forks and heavier hy-

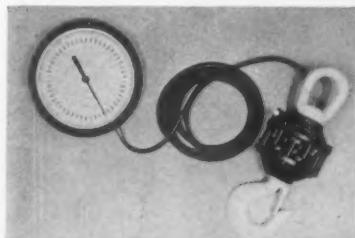


draulic cylinders. An all-welded steel frame, with alloyed steel construction in the lifting channels, gives the unit durability under operating conditions. Safety features include dual floor brakes with 12-in. braking area, plus a built-in lowering valve in the hydraulic system which eliminates the danger of sudden or rapid lowering of a load.

Circle 52 on Card, Facing Page 74

### Remote Indicating Scale

A new approach to over-head crane scale weighing is offered by the Martin-Decker Corp. With this new system the load element and the indicator are provided as separate units connected by up to 50 ft of flexible double wire braid hose. The load ele-



ment can be picked up by a crane hook to any reasonable height and the indicator can be mounted at eye level where the operator can accurately read any load applied to the hook of the element. The dial pointer can safely travel an over-load margin of 90 deg beyond dial capacity. The system is available in capacities from 1000 to 60,000 lb.

Circle 53 on Card, Facing Page 74

### Aluminum Hat

Willson Products has produced a new super-tough aluminum, lightweight safety hat. These protective hats are completely sun reflecting and offer the coolest comfort in hot weather. The aluminum shell is supported on geodetic suspension constructed to conform to the head of any worker and resists the tendency of the hat to shift, tilt, or crash against the skull under angular blows.

Circle 54 on Card, Facing Page 74

### Cargo Crane

A tower type container crane designed for use where containers will move directly between ships and rail cars or truck trailers is offered by Dravo Corp. A bridge type structure is offered for locations where containers move between ships and a dock-side storage area. Both are

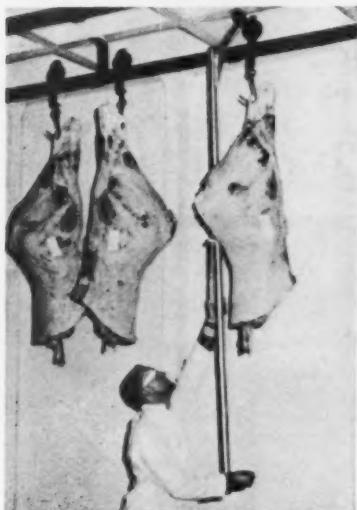


traveling, man-trolley machines for high-speed container handling, available for all standard container sizes. The operator is always directly above his load, assuring quick, accurate positioning of both crane and container.

Circle 55 on Card, Facing Page 74

## Carcass Handler

Packers Development Co. has available a carcass handler made of 10-gage aluminum telescoping tube which extends to 14 ft for 11 and 12 ft overhead rail systems. On its extremity is an aluminum hook which

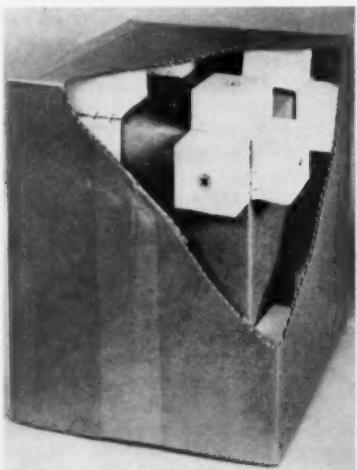


slides under the strap of the trolley holding the load, lifts the trolley and lowers it gradually and safely with a positive acting brake. Weighing less than 20 lb, this unit is completely portable and handles 500 lb or more with ease.

Circle 56 on Card, Facing Page 74

## Protective Padding

Hardigg Industries has developed a floating inner package that cuts shock and vibration damage caused to sensitive electronic equipment, instruments, and other fragile products during shipment. These pads, made of



foam laminated to heavy corrugated, fit into each corner of an outside shipping carton and support an inner container holding the product being shipped.

Circle 57 on Card, Facing Page 74

## Literature from the Advertisements

Listed below are brief descriptions of catalogs, brochures, booklets and other literature offered by advertisers in this issue of DISTRIBUTION AGE. To get your copies of the items offered, simply circle the appropriate number on the Reader Service Card, facing Page 74.

### Protection Services Are Automatic

American District Telegraph Co. clients get modern full-time protection against fire, burglary, holdup, other hazards plus regular "depth" inspections. Learn how you can too. Circle No. 3.

They adjust six ways for every need. Circle No. 6.

### Attachments Make You an MH Whiz

Eight attachments for expediting materials handling with an Automatic Transporter include a hydraulic scoop for loose materials, hydraulic drum handler, and a gooseneck crane attachment. Literature is free. Circle No. 10.

### Magnesium Dockboards Are Light

You can hold the line, even push it back some, on dock loading costs when you use magnesium dockboards by Magliner. New bulletin gives info. Circle No. 7.

### Hand Trucks, Pallets, Ramps

Handling ease is a built-in feature of the hand trucks, ramps, and pallets from Magnesium Co. of America. They're described in new literature. Circle No. 9.

### Roller Grip Control for Walkies

The Moto-Truc Co. equips its walkies and many of its small rider models with roller grip control. Operator twists handle to vary speed and control direction. Circle No. 1.

### Plant Site Selection Helps

Think of the New York Central System when you plan your plant site. The road's specialists can help you select the right spot. New booklets are off press. Circle No. 15.

### Transloading Service for You

There is a brand new transloading center at El Paso. It's run by Southern Pacific for your convenience. There are others at Reno, San Antonio, Dallas, and Pine Bluff. One carload may be transformed into four part loads for direct movement to different destinations. New folder explains. Circle No. 16.

### Portable Pallet Racker

New pallet racker from Material Handling Division of Union Asbestos and Rubber Co. converts standard pallets into low-cost portable racks. You can stack ceiling high and rigidly. Circle No. 8.

### Lift Jack System for Platform Trucks

The Colson Corp. has developed its lift jack system to make materials mobile and always ready to roll. With it you can eliminate dead storage and keep work flow continuous. Circle No. 5.

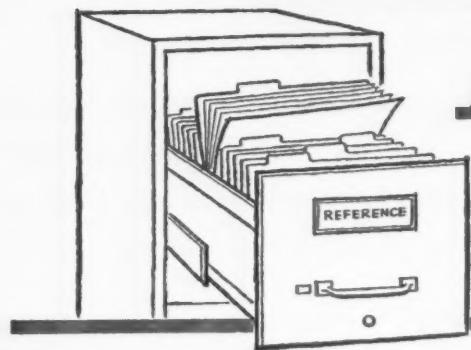
### No-Waste, Pneumatic Dunnage

Air-Blok by Firestone is a tough rubber bladder encased in treated canvas to support lading with uniform pressure. It absorbs all shocks. Circle No. 4.

### Adjustable Dockboard, Six Ways

Your expensive materials handling equipment can be free to handle other work when you install Kelley dockboards.

# DISTRIBUTION AIDS



- Catalogs
- Specifications
- Directories
- Case Studies
- Reports

## Speed Reducer Booklet



application photos and containing selection data and rating tables is available.

Circle 60 on Card, Facing Page 74

## Membership Directory

Affiliated Warehouse Companies, Inc., is offering its 1960 Membership Directory. Information pertaining to the facilities and services of all member warehouses and terminals throughout the country is given.

Circle 61 on Card, Facing Page 74

## Handling, Storage Techniques

How good planning plus one special narrow aisle truck resulted in 10 carloads of extra storage capacity plus unmatched stocking and order picking efficiencies is the subject of a new case history bulletin from Lewis-Shepard Products, Inc.

Circle 62 on Card, Facing Page 74

## Air Cargo Rates

A table giving special low developmental cargo rates to and from the British Isles is offered by British Overseas Airways Corp.

Circle 63 on Card, Facing Page 74

## Rolling-Door Catalog

The Kinnear Manufacturing Co. has just published a new catalog. Illustrations and specific information on all its rolling-door equipment are included.

Circle 64 on Card, Facing Page 74

## Aluminum Dockboard

New from F. H. Langsenkemp is a compilation of the facts about its aluminum dockboard and how it can economically solve your materials handling problems. The brochure points out how the use of special aluminum alloys allows the dockboard to support twice the load with half the weight of comparable sized dockboards.

Circle 65 on Card, Facing Page 74

## Cargo Rate Booklet

A complete set of 11 specific commodity rate booklets for all shippers has been prepared by Air France. The booklets are designed as finger tip information for shipments to and from Europe, Africa, Near and Far East, Mexico, and cities throughout the world.

Circle 66 on Card, Facing Page 74

## FILM

### Electric-Powered Trucks

A sound and color slide film which illustrates design features and user benefits of Clark's 2000-lb capacity electric-powered fork truck is available. The film titled "Something New—Something Better," illustrates and explains stepless speed control made possible by carbon pile resistor. Resistor control unit makes inching operations easy by giving steady increase in tractive power. The film also shows how the Electric Clarklift 20 has lift speeds, short turning radius and lower operating cost.

The film has a viewing time of 20 minutes. It is available free and may be obtained from: Slide Film Department, Industrial Truck Division, Clark Equipment Co.

## Fluorescent Enamel

A descriptive folder on high-visibility fluorescent enamel for safety and decorative painting of vehicles, aircraft, and signs is now available from E. I. du Pont de Nemours & Co. Designs for dramatic identification of trucks and busses are shown, as well as a description of how to use this new type enamel.

Circle 67 on Card, Facing Page 74

## Freight Car Loading System

A technical file folder giving detail design, loading and unloading techniques, and flexibility to various types of lading for the Easy Loader conventional freight car loading system is being offered by Sparton Railway Equipment Div., Sparton Corp.

Circle 68 on Card, Facing Page 74

## Excavator/Crane Catalog

The American Hoist & Derrick Co. has released a 20-page catalog on its crawler/excavator crane. The 200 series machine's versatility is shown on many different type jobs, such as crane, magnet, clamshell, dragline, shovel, and backhoe.

Circle 69 on Card, Facing Page 74

## Shipping and Storage Supplies



Elkay Products Co. announces the 1960 edition of its catalog of moving, shipping, and storage supplies. This 92-page catalog presents newer and faster methods for ordering equipment and supplies. The regular line of products has been expanded to include still more sizes and new developments. Also included are money-saving freight and shipping suggestions.

Circle 70 on Card, Facing Page 74

**For prompt service, use the postage-free postcard provided to obtain FREE LITERATURE and NEW PRODUCT information described in this issue. All material on these pages is FREE unless otherwise noted.**

### Tank-Trailer Catalog



Tank operators are presented with a comprehensive picture of the entire Fruehauf Trailer Co. line of liquid and dry bulk units in a new 24-page catalog. Design features, specifications and options of the aluminum, steel and stainless steel trailers are given. A section devoted to the various types of safety equipment accessories is also included.

Circle 71 on Card, Facing Page 74

### Exhaust Purifiers

Now available from Oxy-Catalyst, Inc., is an illustrated folder on exhaust purifiers for oxidizing carbon monoxide, fumes and odors from gasoline, LP-Gas and diesel-powered equipment. Entitled "For Cleaner Safer Air," the folder gives the technical characteristics and typical elimination data for three types of catalytic purifiers.

Circle 72 on Card, Facing Page 74

### Portable Pneumatic Unloader

A revised bulletin describing a portable pneumatic unloader for use with Airslide cars has been announced by Sprout, Waldon & Co., Inc. It contains application and design data as well as a schematic drawing showing a typical arrangement of a complete system for car unloading, storage, and transfer from storage to in-plant usage.

Circle 73 on Card, Facing Page 74

### Aluminum Disc Wheels

New data on extra payload, longer tire life, and reduced maintenance costs—all major advantages of aluminum forged disc wheels—are detailed in a six-page brochure by Aluminum Co. of America.

Circle 74 on Card, Facing Page 74

### Handling Equipment Catalog

Plant and warehouse handling equipment has been standardized in dimension, capacity, and price and is being offered in a new catalog by Palmer-Shile Co. Stacking storage bins, automatic dump boxes, multi-purpose carts, barrel and box skids, barrel cradles, and heavy-duty ventilated steel boxes are some of the items shown.

Circle 75 on Card, Facing Page 74

### BOOKS

#### DA Truck Specifications

The DA Industrial Truck Specifications 1960-1961 are off the press. Reprints in handy booklet form are available. This year's edition includes specifications on about 1000 different models of industrial trucks. Included are non-lift platform trucks, low-lift fork or platform trucks, high-lift fork or platform trucks, and towing tractors. A chart showing powered end-loading (straddle) carriers which was not included in the June issue is included in this reprint.

Single copies are available by writing The Editor, DISTRIBUTION AGE, Chestnut and 56th Sts., Philadelphia 39, Pa. Price: 70 cents. Quantity prices will be quoted on request.

### Cargo Handling System

An efficient system of loading palletized cargo aboard transport aircraft is described in a study sponsored by the Air Force which has just been released to industry.

The need for more efficient, mechanized loading techniques has become increasingly apparent with the advent of larger cargo planes. This study investigates several possibilities for adapting a mechanized system already developed for low-floor, rear-loading planes to high-floor, side-loading craft, including future cargo jets.

Copies of the publication "A Design Study of an Aircraft Cargo Handling System for High-Floor Aircraft" for Wright Air Development Center, U. S. Air Force may be ordered from OTS, U. S. Department of Commerce, Washington 25, D. C. It contains 118 pages and is priced at \$2.50.

### Truck Stop Directory

The latest edition of the Pure Oil Co. Station Directory is off press. Included are maps showing the exact location of each station, photos of most of the truck stops, descriptions of the facilities available at each, and a complete list of state size and weight restrictions on trucks.

Circle 76 on Card, Facing Page 74

### TAA Research Booklet

The Transportation Association of America has prepared the second edition of "Transportation Research," a booklet containing a list of transport research activities by universities, government agencies, research organizations, and business firms.

Circle 78 on Card, Facing Page 74

### Extra-High Lift

The Yale & Towne Manufacturing Co. is offering a bulletin covering its Triplex mast, an extra-high, hydraulically-operated lift. This unit is now available for use with 2000-3000 lb capacity versions of the GP-52 gasoline-powered, and K-46, K-47, and K-58 electric industrial lift trucks. Trucks equipped with this mast are suited to operation in plants which have low ceilings or doorways in some areas yet require high stacking in others.

Circle 79 on Card, Facing Page 74

### Railway Express Service

How you can use Railway Express International through shipping services on import shipments to the U.S.A. is explained in a pamphlet released by the Railway Express Agency. A list of overseas agents from Algeria to Turkey is included.

Circle 80 on Card, Facing Page 74

### Plant Safety Kit



A kit aimed at making materials handling operations safer and more efficient in production, storage and shipping areas has been released by Towmotor Corp. This kit contains a pocket-size, fact-filled Lift Truck Operator's Guide, four humorous safety cartoons, and four large lift truck route posters printed in bold letters on a bright background.

Circle 81 on Card, Facing Page 74

## ... The Executive Pilot

(Continued from Page 31)

abundant travel demands of the trucking industry. Eastern Express, Inc., Terre Haute, Ind., recently took to the air in a twin-engine, company-owned airplane. The carrier operates in 11 states bordered by the industrial Midwest and the Eastern Seaboard. Eastern has 24 installations in the area, 2500 employees, and uses 2000 pieces of equipment.

### Wide Territory Covered

To cover this much territory effectively, a business airplane became essential. Extensive trials were made last year with a leased plane. Eastern officials determined hourly operating costs and explored the increase which could be expected in executive efficiency through utilization of the plane. The company finally purchased a twin-engine, seven-place plane which can fly at high altitudes, over the weather, at a speed of 200 mph.

The plane is used during periods of terminal expansion, for surveys of new areas, and development of new operations. Eastern's president, Wilson M. House, uses the plane for field trips in order to direct operations and maintain close personal contacts with installations. Welby M. Frantz, executive vice president, uses the plane for company business and also in his capacity as president

of the American Trucking Associations, Inc.

Here is an example of an Eastern Express air schedule. Six company executives worked in the office one Monday morning and taxied down the runway at Terre Haute at noon. First stop: Bedford, Pa., where Eastern's director of safety debarked to prepare for safety meetings scheduled for Tuesday for drivers at the Bedford installation. The plane touched down on the 1900-ft runway immediately adjacent to the Bedford control station.

Without the plane, the trip would have had to be made from Terre Haute to either the Johnstown, Pa., airport or the Pittsburgh airport. Auto mileage to Bedford from these points would register 38 miles and 115 miles respectively. The plane left Bedford after the drop-off and proceeded to the Newark, N. J., airport where the manager of freight service and the manager of the Insurance Department met a representative of Eastern's Metuchen, N. J., terminal and drove to that newly-expanded terminal for a review of freight claims and handling programs.

Next the craft moved on to Boston where House, Frantz, and the latter's assistant had a meeting scheduled for Tuesday morning to investigate favorable terminal locations for a small carrier

which Eastern had acquired for expansion purposes. After that was accomplished, late Tuesday afternoon, the plane left Boston for Newark airport. There it took on a compliment of Eastern executives and moved on to Bedford where the passengers had dinner before returning to Terre Haute that evening.

### Variety of Aircraft

As both Berman Service and Eastern Express are aware, there is a wide variety of business aircraft available today. It ranges from small piston-engine planes to large turbo-prop and pure jet transports. Over two-thirds of the business fleet are single-engine, the majority of which carry four passengers. Most of the others are executive twins with seating from four to eight persons. A small percentage is in the airline category with higher seating capacity.

Four of the many producers of business aircraft account for over 95 per cent of the total annual dollar volume sales. These manufacturers are Aero Design, Beech, Cessna, and Piper. This may be one reason why the giants of the airframe industry are developing an appetite for private and business aviation markets. It is quite possible that during this decade one or more of them may enter the field. It certainly points a complimentary finger at the maturity which the business aircraft industry has attained.

Industry market research shows that the average length of a flying business trip is under 400 miles.

Left: Officers Welby M. Frantz (left) and William M. House of Eastern Express are shown with plane used for tests on costs and benefits. Below: Eastern chose an Aero Design and Engineering Co. Commander. The twin-engine, seven-place craft keeps Eastern in close touch with its terminals; covers large territory



This figure seems to preclude any great demand for speeds in excess of 200 mph in the next decade. This is so because unless a flight would cover a distance greater than 400 miles, the block to block speed differential between planes which fly 200 and 300 mph would be negligible—considering all factors.

#### Evaluation of Planes

Companies evaluating new planes should carefully analyze their travel requirements to determine if high performance aircraft will justify the increase in cost. The next decade will see a substantial increase in the number of light and medium executive twins and several new designs will appear with the advent of turbine power. While average speeds will increase, cruise speeds for the greater part of the nation's business fleet will balance in the 150 to 300 mph range.

Beech has made market studies which show buyer interest in a new plane with turbo-prop power, pressurized cabin, a cruising speed of 300 mph, and a range of 1200 miles—for a capacity of from six to eight passengers. But this craft will not be in the banana-split category—it will probably bear a tag slightly under \$500,000. Electronic equipment makes some of those digits necessary.

The industry is interested in a variety of small turbine engines—especially in the 250 to 1200 hp range. Some are in operation or in various stages of development. The next decade will usher in new piston-powered, single engine models in the \$10,000 to \$15,000 price categories.

#### Fly As You Learn

Few realize that more non-pilot businessmen and women are learning to fly as they buy. You can be taught to fly your newly-purchased plane during a business trip. Sales to firms and individuals who have never owned a plane represent less than a third of all new aircraft deliveries. The big share comes from repeat business—replacements and additions to company fleets. Many of the used planes taken in trade also go to first-time owners.

During the next ten years, the factor and intense consideration of weather will be reduced as a problem for the competent pilot. Dependable navigation and communication packages of satisfactory size and weight, which are accurate, easy to operate, and economically priced, have already increased the utility of small business planes.

However, the one great problem still looming on the horizon of this decade centers on the number of airports and adequate traffic management necessary to handle this exploding airplane population. Secondary airports are not developing as they should and new ones are being constructed at about the same rate at which others are being lost. Fifty-five per cent of all the planes produced by four leading manufacturers annually are sent to the 100 largest cities in the country.

Our major terminals have become congested. There is urgent need for secondary runways at the 100 largest airports, greater secondary airports in our metropolitan areas, and more single strip community airports. This is a problem which, as long as our airframe factories hum, will become more acute each year.

A great amount of business aviation converges on major airport traffic. The necessity of employing these terminal points will grow with gains in private and executive flying. General Aviation's itinerant movements at 220 airports (of which business aircraft forms a major segment) where the Federal Aviation Agency operates control towers, already exceed those of commercial air carriers by almost 15 per cent.

Statistics for 1959 business aircraft travel are impressive and point toward a healthy, if not robust, future. Last year the 30,000 business planes flew some 6,000,000 hours—an average of 200 hours per plane. At a speed of 150 mph, conservative for the typical business craft, this equals 30,000 miles. The same distance by automobile would require 750 hours of average driving.

Five hundred hours flying time a year is not unusual. According



L. B. Smith Corp. makes the Tempo II for 350 mph, 2400 mi. range

to projections by the industry, business flying will enjoy the facilities of 40,000 aircraft by 1965 and 60,000 by 1970. The FAA estimates that by 1965, General Aviation aircraft utilization will increase 33 per cent.

Costs have been lowered in the last eight years due to accelerated tax write-offs. Many firms in the 52 per cent tax bracket set their planes up as capital investment making out-of-pocket expense 48 per cent. About 80 per cent of the value is amortized by the close of the third year. The plane can be sold on the outside market for two times its depreciated value and the difference qualifies as a capital gain with a lesser tax.

Taking a high example: A \$200,000 plane is amortized down to \$40,000 after three years. It can be sold for \$80,000 and the \$40,000 is a capital gain of which 25 per cent is taxed.

But these figures are not completely astronomical when it is realized that U. S. Steel Co. executives travel in the luxury of plush eight-place Viscounts. And remember that most planes have an average life span of 10 years in the air.

Predictions included in this article are considered to be conservative. In August of 1955, for example, the Civil Aeronautics Administration, now the Federal Aviation Agency, forecast that business flying hours would climb to 5,700,000 by 1960—a 46 per cent increase over 1954. But records now show that business planes flew over 6,000,000 hours in 1959 and at the present rate of growth will fly more than 6,300,000 hours in 1960. •

(Resume Reading on Page 32)

## ... Hidden Costs

(Continued from Page 37)

Weight involved per car	20,000 lb
Commodity expressed in cubic feet	1000
Storage charge per cubic foot	4¢ for 30 days
Storage charge for 30 days	\$40
Storage charge for 1 day	\$1.33

In our example, assume that you have title to the goods, fob. Your one-day transit-time cost is equal to your storage cost plus the interest charge on inventory investment on goods in transit plus one day's interest charge on inventory in storage. This is illustrated as follows:

Interest charge on inventory investment in transit per day	\$2.78
Interest charge on inventory investment in storage per day	\$2.78
Storage charge for one day	\$1.33
<hr/>	
Total value of one day's transit time	\$6.89

In summary, one day's transit time involves an investment in inventory in transit. If transit time is one day, you must normally maintain one day's inventory ready to cover your needs while you re-order. In reverse, if transit time is cut one day, you can maintain one day's inventory less. Inventory size affects your storage charge.

To measure the cost of unreliable service, first decide whether or not you maintain an inventory large enough to protect you from the most unreliable service. If you do, your unreliable service cost is the interest charge and storage charge on all the number of days' inventory needed to protect your sales or production from uncertain delivery.

If you take your chances with

stated or "average" delivery time, you can measure your unreliable-service cost by the following method. Figure the scheduled or "average" transit time. Then subtract it from the actual transit time.

Do this for a year's period, if possible, to get a good sample. Ignore those occasions when deliveries are ahead of schedule. Goods delivered before they are expected are often as much a headache as goods delivered too late. Divide the number of late days by the number of trips in your sample. This is your average "lateness" per trip. Multiply this lateness figure by your inventory-investment-interest charge and storage charge for one day. This gives you your minimal unreliable-service cost.

Table 1 continues our example by illustrating how to measure minimal unreliable-service costs. The .37 day average-lateness-per-trip figure arrived at in this table can be used to arrive at a minimum unreliable service cost per trip.

The problem can now be stated as:

Interest charge on inventory investment in transit per day	\$2.78
Interest charge on one day's smaller inventory	2.78
Storage charge for one day	1.33
<hr/>	
Total value of one day's transit time	\$6.89
<hr/>	
Average lateness per trip	x .37 days
<hr/>	
Minimum unreliable service cost per trip	\$2.55

You now have your one day's transit-time cost, as reflected in your inventory-investment charge and your storage charge for one day. You also have your unreliability-of-service cost. To these two costs we add the freight rate, the handling cost, and the average loss and damage cost for our total transportation cost. Perhaps you have adjustments to make to these costs. For example, the devaluation costs of subtle spoilage changes in perishables may be taken into consideration. Others may have devaluation costs caused by rapid fashion or weather changes.

Perhaps you may wish to ignore both transit time and storage costs because you wish to age your product in transit, e.g., lumber.

Continuing our example, Table 2 illustrates how you can measure the total transportation cost of one carrier and compare it to another. It is assumed in this example that you pay the freight charges, own the goods in transit, and pay either the loading or unloading cost, depending on whether you are the shipper or consignee.

The above example provides the traffic manager with a simplified research tool. By adapting it and using it for his company, he can arrive at a realistic figure for total transportation cost. •

(Resume Reading on Page 40)

### Staggered Ducts in Reefers



If you think staggered ducts are as useless as down off a duck's back, you're mistaken. Consolidated Freightways has added 208 of these reefers to its fleet. The staggered ducts distribute cold air evenly from the evaporator while the ribbed plastic side-walls keep the load away from walls for good circulation. Up top with the ducts are seven rows of meat hangers

## ... Business Airplane

(Continued from page 33)

Traveler. It features parallel those of the Traveler series except for the landing gear which is claimed to provide the convenience and ground handling qualities of tri-cycle gear with the ruggedness and ground stability of conventional gear.

Because of the traction with the mid-gear and its control by direct linkage by the rudder pedals, landing and take-off with crosswind conditions are easily made. Visibility is adequate from front and rear seats.

### Short Takeoff

The Helio Aircraft Corp. has unveiled its Super Courier which is capable of taking off and landing over a 50 ft barrier in less than 500 ft with zero wind. It cruises at 170 mph and can fly as slowly as 30 mph. Its useful load is approximately 1000 lb for commercial passenger carrying when operating from the standard 400-ft STOL pad. The new five-place plane features a 295-hp geared Lycoming engine with three-blade propeller. The tail wheel is steerable.

Optional equipment includes a locking device on the cross-wind landing gear—it allows the pilot a choice of either castering or fixed-direction wheels.

### Plane Trio

Three planes are in the news at Piper Aircraft Corp. The Caribbean features two-position flaps and adjustable stabilizer for optimum aerodynamic trim. The cabin has five fresh air ventilators for travel comfort at a cruising speed of 132 mph with a range of 500 miles. The large nose wheel, same size as main wheels, is an advantage on rough ground. There is a rear door for passengers and 42 cu ft for 600 lb of cargo when the rear seats are removed. Normal baggage area capacity is 100 lb.

### Automatic Control

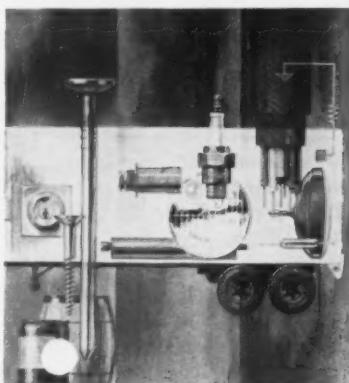
The Comanche by Piper has automatic flight control for automatic turns, and with the heading lock

engaged, you can spend much of your flight time without touching wheel or rudder pedals. The Comanche's baggage area holds 200 lb, 50 lb per passenger. Front seats tilt to three positions. The main wing spar is located under the rear seat to provide unobstructed leg room for rear seat occupants. Horsepower-wise, Comanches are available with 180 hp or 250 hp.

Taking the lead at Piper is the Aztec with a top speed of 215 mph, cabin for five, and many extras for optimum executive comfort in flight. And it is a twin engine craft with an allotment of 1000 lb for luggage and passengers. This airplane has the features of the other two incorporated in a plush interior. Some of the finer points of the controls and panel accessories include dual landing gear warning system with lights and horn. ●

(Resume Reading on Page 34)

give the little ones a big send-off...



### LTL rates V.I.P. treatment

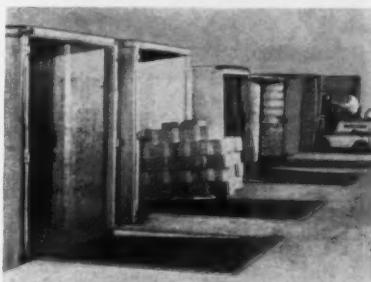
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methods and record  
of service of the  
fastest growing  
motor carrier in the history  
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"The motor carrier with more go-how"

General Offices: 1450 Wabash Ave., Terre Haute, Ind.

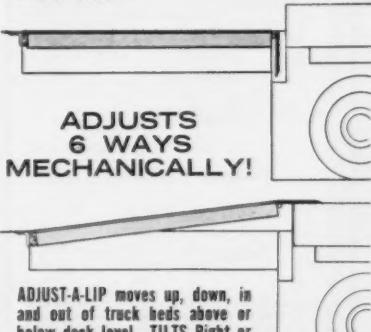
## KELLEY DOCKBOARDS CUT COSTS 20% FOR CHEESE CO.



"Down went dock operating costs, up went use of valuable power equipment, when we installed Kelley Hi Lo Dockboards," reports R. G. Bush, Chief Engineer at Schreiber Cheese Co., Green Bay, Wis.

In his letter to a prospective Kelley purchaser Bush exclaimed, "Kelley Dockboards have more than paid for themselves! Our men look for ways to load trucks with powered equipment today. Previously, the use of loose dock plates made them reluctant to use powered equipment going in and out of trucks because dock plates could easily slip out and cause a serious accident."

All in all, Kelley Dockboards are one of the best investments we've ever made. And, their Dockboards are truly trouble free!"



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below dock level. TILTS Right or  
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## Dependable All-Weather Door-to-Door Service

Expedited service between Chicago, Toledo, Cleveland, Buffalo and St. Louis, or between these points and principal eastern, western and southwestern destinations. Corresponding Nickel Plate service between substantially all important eastern points and the West and Southwest.

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AND SCHEDULES CONTACT

Nickel Plate Road  
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Or look  
under "Railroads" in the  
yellow pages of your phone book

## ...Warehouse

(Continued from Page 41)

A sign indicating the entrance to the enclosed area, states that it is leased. The name of the lessee warehouse company also is stated.

Completion of these steps then places the owner of the goods in position to request receipts covering the warehoused assets. Fortified with these documents, he can approach his banker for a loan.

A rather recent development in field warehouse practice involves a close credit tie-up between manufacturers and their distributors. The manufacturer, say, of consumer hard goods such as refrigerators, stoves, etc., holds the receipts as security for the accounts receivable and allows delivery only when the field warehouse is instructed to release the merchandise under its control. Such an arrangement enables the distributor to carry a complete inventory, but full credit control remains in the hands of the manufacturer.

Obviously, bank services are eliminated. There is no need for the distributor, whose premises are controlled by the field warehouse, to request bank credit.

### Field Warehouse and the Bank

The relationship established between bank and warehouse company is that of an exclusive third party control over marketable assets pledged against loans made by a bank to the client. Field warehousemen are highly trained specialists in both warehouse and loan administration. It is this expert knowledge and experience in custodianship which creates confidence in the banker. It assures him that his collateral interests will be fully protected.

In addition to the ethical aspects, the banker is relieved of many administrative details allied to lending, but which lie largely in the province of warehousing, and which are attended to exclusively by the warehouse representative. The banker thus retains his position as a specialist in the administration of credit. He can

devote his full energies to the business of loan analysis.

### Borrower's Position With the Bank

In this connection, the usual three Cs of credit prevail; namely, Character, Capital, Capacity, to which has now been added Commodity, when field warehouse facilities are used.

The problems of obtaining cash working capital with which to purchase raw materials and operating supplies, or to meet seasonal payrolls, is an ever recurring problem in many industries. While the orthodox method of pledging accounts receivable with its limited credit and time restrictions cannot be shelved, storage-financing exerts a liberalizing influence when seasonal financial problems occur.

Field warehouse financing has a certain elasticity not so obvious under other methods of borrowing. As inventory accumulates, borrowing capacity expands and, conversely, as it decreases. In other words, working capital requirements vary directly with expansion and contraction of inventory.

Under such circumstances, the depositor can approach his banker for a loan on a most favorable basis. What he actually does is to hypothecate his current inventory in the custody of the field warehouse company. If the pledged goods are finished and ready for market, the proceeds of the released commodities are credited against the note as soon as sales are made.

If the hypothecated goods are incoming semi-processed products or supplies—such as tins for canning or cartons for shipping containers—they may immediately become collateral for cash, instead of waiting to be put on the production line.

One of the latest uses of field warehouse services is that of the trailer manufacturer who invests in plywood, ranges, and other components of the house on wheels, which make satisfactory collateral under field warehouse supervision.

From the bank's viewpoint, the high security value of commodi-

ties under field warehouse supervision enables the former to grant longer term loans than is possible under short term financing. The rigid custodianship exercised by the field warehouse company assures the lender at all times extraordinary protection of its collateral interest. Such relationship expands the bank's service to its client, especially to such concerns which might not be able to meet the more restrictive specifications for a short term loan.

A requirement of a field warehouse loan is that the goods be marketable. This is necessary in order to protect the bank's position as a lender in case liquidation of the merchandise is necessary. It is also used as a basis for computing the amount of the loan and to provide a safe margin against price fluctuations. This margin varies, but loan percentages range from 50 per cent to 90 per cent of the value of the merchandise in storage. Other pertinent aspects are collateral inspection by the bank, examination of records, proper fire insurance coverage, and general follow-up.

As a result of this vigorous attention to details, warehouses and banks report an extremely low minimum of losses. The soundness of this system of storage-financing is exemplified in both federal and state banking laws which permit lending institutions to extend their regular lines of credit.

The cost of employing a field warehouse company varies with the size of the loan, costs of installation and supervision. Experience indicates that field warehousing is more applicable to medium-size concerns than to smaller ones, partly because there are certain fixed costs involved, and that these expenses decrease inversely with the size of the operation. Professor Albert G. Sweetser's commendable treatise on field warehousing states that these services can only be afforded when loan requirements exceed \$10,000 for a six month period. On small loans, the cost of field warehousing may be as much as 3 per cent annually, and as low as 1 per cent on larger loans. Much depends upon the individual borrower, his

credit standing, and the lending bank's policy.

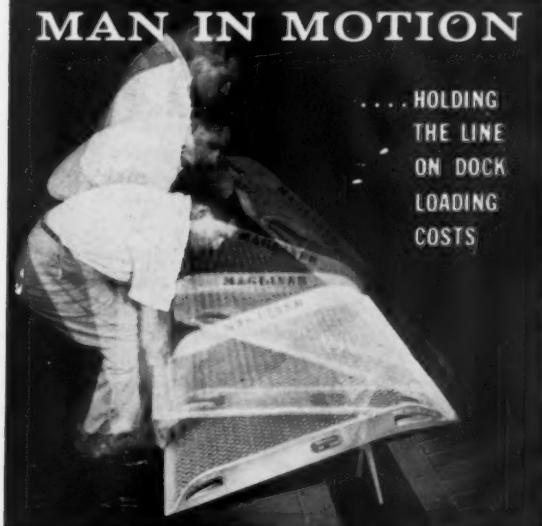
From the foregoing it can be said that the triple alliance of banker, borrower, and warehouseman works advantageously for those who have seasonal peak financial problems as in the food processing industries, when both raw materials and supplies create financial obligations during the canning season. Other businesses which are adaptable to field warehousing range all the way from alcohol to yarn. The universality of storage-financing is substantiated by a long list of manufacturers, wholesalers, and retailers who have successfully adopted this method of overcoming their seasonal finance problems.

One thing is certain, and that is that field warehousing provides the machinery for helping the business man over rough financial spots toward that always sought after "cash to cash" objective: the conversion of stored materials, goods in process, and finished marketable products into money. •

(Resume Reading on Page 42)

## MAN IN MOTION

HOLDING  
THE LINE  
ON DOCK  
LOADING  
COSTS



Down goes a Magliner, down go costs! . . . and they stay down with Magliner Magnesium Dock Boards on the job! Magnesium light for one man handling . . . magnesium strong for rugged service . . . Magline-designed to keep loads in motion . . . safely, smoothly, economically! Send today for your copy of "Difficult Dock Problems"—the bulletin that helps you spot and correct high-cost dock loading problems.

Request Bulletin DB-204, Magline Inc., P. O. Box 46, Pinconning, Mich.

## MAGLINER MAGNESIUM DOCK BOARDS

Circle No. 7 on Card, Facing Page 74, for more information

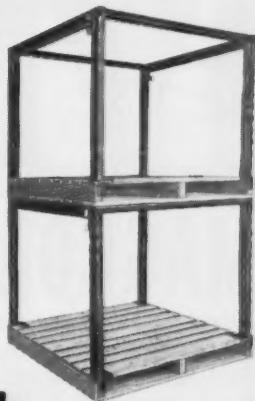
## NEW STURDI-BILT PALLET RACKER

Converts standard pallets into  
**LOWEST-COST** portable racks

- Provides most rigid racking ever offered
- Takes heavier loads.
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Circle No. 9 on Card, Facing Page 74

## ... Transportation

(Continued from Page 48)

of right" to carry anywhere in the state any of the following items of the Third Schedule: Berries, soft fruits, unprocessed market garden and orchard produce (excluding potatoes and onions). Ice cream, ice, milk, cream, eggs, meat, fish, flowers, household furniture (new or secondhand except from store to store), livestock, and petroleum products in containers within a 50 mile radius of a depot or in bulk tankers anywhere in the state.

D. Operations under discretionary licenses—there are 4605 "D" licenses in existence which generally authorize some form of operation beyond the limits of the appropriate "E" license.

E. Inter-state cartage is outside licensing control (road charges payment for mileage run within Victoria is all that is necessary).

Here is a list of commodities for which permits are issued virtually on demand: Uncrated plaster and cement sheets, bricks within a 100 mile radius, tiles, cement prefabricated products and special types of cement pipes, glazed doors and timber windows, steel window frames, sticked kiln-dried timber, uncrated refrigerators and washing machines, sanitary earthenware, scrap metal and marine goods, and superphosphate up to 100 miles from the fertilizer works. Permits are also issued for a variety of purposes in special circumstances. For example, cartage for certain decentralized industries where special assistance has been provided and petroleum products in drums and packages beyond the 50 mile radius limit.

Considerable extra freedom of movement is also permitted on the short haul between Melbourne and Geelong. The foregoing would require closer study to gain an accurate impression of volume and significance in any aspect but, in total, it does represent considerable extra road freedoms to which the Railways Commissioners are constantly directing attention.

On the other hand it is noteworthy that, in Victoria, the restrictions against road transport

competing with rail for medium to long distance business in general merchandise and other higher freight lines have been considerably tighter in the post-war period than existed pre-1939.

This is more apparent when it is noted that during the period since before regulation commenced in 1934 and up to the early years of the 1939-45 war, most country towns in Victoria received regular service from road haulers who were, in most cases, directly competitive with rail and catered primarily for the higher freighted merchandise required by storekeepers, hotels, and primary producers, hauling back return loads of wool and other produce. Also that until 1941, ancillary transport was unrestricted and a number of firms, both in the city and country, operated heavy vehicles to and from the country carrying merchandise of various kinds. In 1941, these "as of right" operations were curtailed to a 50 mile radius from place of business, and size of vehicle restricted to four ton load capacity. And primary producers who were formerly able to engage in carrying for their neighbors lost this license right in 1953, and are now restricted to the carriage only of their own produce and requirements for their own property.

It is generally argued that so long as railway service is available to handle a particular traffic, then railway service must be regarded as "adequate" within the meaning of the Act and application to use the road alternative refused.

In considering "adequacy" within the meaning of the Act, therefore, we do, primarily, adopt the concept of "net economic benefit" stated by Sir Douglas Copland. Also the related idea of "substantial advantage" adopted by the original Transport Regulation Board under the chairmanship of P. D. Phillips.

### Interest Served

There must be a point where the community interest is best served by admitting road transport. In other words, in cases where its inherent efficiency for particular purposes turns the scale. •

(Resume Reading on Page 49)

## ...Paperwork

Continued from page 49

These rate and billing entries will appear on the finished freight bills.

Up to this point, this system may not appear different from others now in service, but billing clerks who formerly transcribed bill of lading and rating information to freight bill carbon sets are not required. Now the rated and extended master is handed directly to the duplicator machine operator. Before duplicating the freight bill copies, the operator uses an addressing machine to enter the "Pro" number as well as carrier identification and terminal location on the master.

The combined bill of lading and freight bill master is then duplicated. Any number of copies may be duplicated to meet customer requirements. The black-on-white copies are reproduced at high speeds and remain permanent and legible under all handling and

weather conditions. The driver's freight bill copies, immediately available, are sent to the dispatcher's office, where, as in the present system, they serve as a truck release and the shipment moves on to the consignee.

Where interline shipments are involved, a new master is automatically produced as a by-product of the original freight bill duplicating cycle. It becomes a part of the freight bill set given to the outgoing driver. This master-from-master technique eliminates rewriting of all information at the junction terminal. At the point where the second carrier picks up the shipment, using a single stroke of the addressing machine, he adds his "Pro" number, identification, and terminal location. The rating clerk posts the revenue for the second carrier and the freight bill copies are duplicated without rewriting any of the information appearing on the first carrier's bill.

If a third carrier is involved, the process is repeated. One duplicator operator can process up to 400 bills an hour—reputed to be

10 times faster than a billing clerk using manual methods. Here's how finished copies can be distributed.

The delivery receipt goes to the consignee with the freight for signature and then is returned to carrier. Destination-office copy is filed at the delivery terminal while the consignee copy is filed by the consignee. Freight bill is retained by the carrier if the shipment is prepaid, but goes to the destination if the shipment is collect.

The duplicate freight bill is just that—an additional copy. A cashier copy is retained by the terminal collecting the freight charges. The auditor's copy is filed at the carrier's main office for collection recheck. An extra copy can be filed alphabetically by the shipper at the originating terminal. One or more copies may be used for manifests by some carriers. Some carriers also type manifest sheets—a complete listing of all shipments on a trailer. They are used for tracing and identification purposes. •

(Resume Reading on Page 50)

## ...Trailer Trends

(Continued from Page 53)

GMC have entries in this field. Weighing in with a payload area of 243 cu ft is GMC's Junior Van. It is only 14 ft long. Wide rear doors and 5½-ft high sliding doors provide quick access to any payload. Turning radius is 18 ft for maneuvers through midcity traffic.

The Motor Truck Division of International Harvester Co. offers two new heavy-duty chassis with Metro walk-in cab and front-end section. The forward control multi-stop units are rated at 21,000 lb gvw. Both are sold without bodies which can be purchased and mounted locally.

Steel panels are shaped to form the interior body posts in the van body announced by Unisteel Body Co. Individual panels are vertical

in construction—easily replaced should damage occur. The roof skin is protected by a steel reinforcement over the roof bows to prevent injury from overhead objects.

Multi-stop delivery trucks from White Motor Co. bear the tag of PDQ. They are in classes from 5000 to 7000 lb gvw with five models up to 16,000 lb gvw. The PDQs have fiberglass roofs with translucent skylights, unitized body construction, and removable power dolly. Fiberglass side panels are optional. The trucks have Willys Jeep four-cylinder; 70-hp engine as standard with 111-hp, six cylinder-engine optional.

Still on the subject of multi-stop trucks, a look at Studebaker shows a truck built for heavy duties and easy maintenance. A man of average height can stand at the front bumper and reach the rearmost spark plug. All electrical wiring, even the windshield

wiper motor, is under the hood. The Champ, as it is called by Studebaker, is available in ½ and ¾-ton models with gvw ratings of 5000, 5200, 7000.

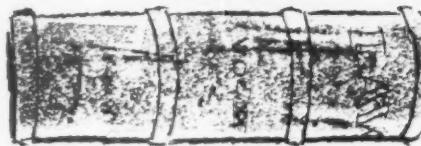
In the realm of open-top trailers, Highway Trailer Co. has a 40-ft long aluminum trailer providing waterproof hauling with open-top operation. One man can handle the tarpaulin top. Special convertor-type components make this possible.

Trailmobile has made use of a unitized shell design in its new aluminum tank trailer. Full length aluminum extrusions in the lower belly section and top section of the tank eliminate circumferential welds, reinforcing members, and pads. The new cylindrical tank was designed for gasoline and light oils. The lower extrusion includes a formed recessed channel for complete and efficient drainage of all compartments. •

(Resume Reading on Page 54)

# within the Law

By Leo T. Parker  
Legal Consultant,  
Distribution Age



## WAREHOUSING

**Can a warehouseman sue and recover storage charges after a receiver was appointed to the stored goods?**

Considerable discussion has arisen from time to time whether or not a warehouseman is entitled to sue and recover storage charges which accrued after a receiver was appointed to conduct the owner's business affairs. This question of the law was answered in the case of *D— v. T— Co.*, 54 F. (2d) 670.

The facts of this case are that a warehouseman accepted for storage from a company a certain quantity of merchandise. After the goods had been in storage for a long time the company became insolvent; a receiver was appointed. The goods remained in storage for a long time after this. Finally the warehouseman filed suit and by proper legal procedure sold the goods for \$364. Since the warehouseman's bill amounted to \$1152, the warehouseman kept the amount of \$364. However, the higher court held that the warehouseman is not entitled to the additional money from the company's estate. It said:

"Without leave of court, a receiver has no power to pledge the trust estate or to make a contract for a lien or for borrowed money..... It follows, therefore, that the mere inaction of the receiver..... or a promise made by the receiver in the absence of authority from the court as expressed is insufficient to create a charge upon the rest of the estate..... The petitioner (warehouseman) will be allowed to retain all the proceeds of sale in full satisfaction of its claim."

**Can a warehouseman receive payment of storage charges for storing stolen goods?**

A warehouseman asked: If a thief steals merchandise and stores it in a warehouse, can the innocent warehouseman receive payment of stor-

age charges from one who holds a recorded mortgage on the goods?

The answer is, generally, yes.

If the conditional contract of sale held by the seller was properly and legally recorded, the warehouseman's lien is secondary to the seller's lien, and the seller may recover the stolen goods from the warehouseman.

On the other hand, the legal aspect must not be overlooked. The true and legal owner of stolen goods always has a right to recover possession of the same from any person or firm which in any way gained possession of them.

**If the discrepancies of a mortgage are minor is the mortgage invalid?**

The law is well established that an unrecorded chattel mortgage, unknown to a warehouseman or a purchaser of the mortgaged merchandise, is invalid with respect to the warehouseman or purchaser. Also, a chattel mortgage in which the mort-

gaged goods are insufficiently described to justify identification, is invalid. However, a leading higher court held that a mortgage is not invalid if the discrepancies are minor.

For instance, in *E. N. B— v. G—*, 193 N. E. 43, Boston, it was shown that the owner of furniture and rugs mortgaged them. The dimensions of one of the rugs, listed in the mortgage, were slightly incorrect as the rug was described in the mortgage as "About 12 x 22 Oriental Rug," when in fact measurements of the rug were 9 x 20.

Later the mortgagor sold the furniture and the rugs without consent of the holder of the mortgage. The mortgage holder then filed a replevin suit against the purchaser to recover possession of the merchandise. The purchaser attempted to avoid giving up possession of the goods on the grounds that the mortgage did not correctly describe the rugs, and, therefore, it should be held invalid.

The higher court required the purchaser to surrender possession of the goods. It said:

"Chattel mortgages recorded are valid as to third persons. The contention of the defendant (purchaser) is that the goods were not described in the mortgage precisely, but with some mistakes in dimensions. This contention cannot be supported. It has been held that a general description of personal property in a mortgage is sufficient to include articles which can be identified and which were intended to be covered by it."

## Trailers Get Production Lift



A Georgia trailer company uses special lift trucks to move trailer bodies through production. Great Dane Trailers, Inc., employs a special coupling plate to engage the trailer. All controls are in the steering handle. The capacity of this Lift Trucks, Inc., model is 4000 lb

**Can a warehouseman collect storage charges after receiving encumbered merchandise?**

A careful review of leading higher court decisions discloses that the courts are not in accord as to their answers to this legal question: "If a warehouseman accepts encumbered merchandise for storage on which a lien has been previously recorded, can the warehouseman collect the storage charges after receiving con-

sent of the lien holder to keep the goods in storage?"

For illustration, in *F—Co. v. J. F—W—Co.*, 39 Atl. (2d) 235, it was shown that a purchaser named D— signed a usual conditional contract in which the seller retained legal ownership and title to the furniture until paid for. However, the seller failed to record this contract, according to laws of the state. Soon afterward D— stored the furniture in a warehouse. About four months after the goods were deposited by D— with the warehouseman, the seller located the goods. He then informed the warehouseman that D— was a conditional purchaser of the goods, and demanded possession of the furniture. The warehouseman refused to deliver up the furniture unless the warehouse charges were paid.

Negotiations for a settlement between the warehouseman and the seller continued for several months. Then the warehouseman finally sold the furniture at public auction for overdue storage charges. The seller sued the warehouseman to recover the value of the furniture.

The higher court held the warehouseman's lien valid and therefore he was not liable to the seller.

Another important legal question in this case was whether the warehouseman's lien was altered because he continued to keep the goods in storage after he was informed that D— was not legal owner of the goods. In this respect the court said:

"The fact that the warehouseman continued to store the goods after learning of the existence of the contract in no way alters defendant's (warehouseman's) position."

Hence, according to the court if the holder of an unrecorded mortgage or conditional contract of sale learns that a warehouseman has, without knowledge of the encumbrance, accepted the goods for storage he is duty bound to pay the warehouseman the accrued storage charges before and after demanding possession of the goods.

#### Is a bailee liable on stored goods if he impliedly guarantees to safeguard the goods?

Yes. Recently a higher court rendered an unusual decision to the effect that a gratuitous bailee "impliedly" guarantees that he will exercise "ordinary" care to safeguard goods in his warehouse.

For example, in *A—A—Co. v. U—S—*, 252 Fed. (2d) 529, the testimony showed facts, as follows: In a cargo discharged from the S S Q—M— at Pier 90, was a case of English woolens weighing 309 lb. It was imported by the H. W. R— & Co., Inc., a licensed customs broker, for consignment to

#### Control Board Plots Van Shipments



Through the development of a huge magnetic central control board National Van Lines, Inc., has developed a new central traffic control concept. The board uses magnetic discs to show cargo locations of every National van on the road. Discs of different colors denote type of load. By using the board, the Operations Department can contact vans with available space while they are on the road and have them pick up additional loads

C—C—. The stipulated value of the goods was \$2461. Soon afterward the goods were removed to the official government warehouse for inspection by the custom officials to ascertain if the goods were of the value and quantity declared in the invoice. That afternoon an employee of the importer turned certain government tickets over to a trucking company. At 4:19 p.m. the trucker surrendered the tickets to the custom officials to obtain delivery. Since the delivery platform closed at 4:30 p.m., the customs officials would not deliver the goods that day. On the following day, the custom officials were unable to locate the goods to make delivery. A week later, the duty was refunded, because the goods disappeared from the government warehouse and "the manner in which they have vanished remains a mystery."

In subsequent litigation, the higher court held the U. S. liable. It said:

"The obligation of the government was not artificially created by law but rather stemmed from an implied promise to redeliver the goods as soon as customs had checked them against the invoice. Such a promise need not be formalized in a written agreement or even made the subject of a specific conversation. It arises from the implied promise to return the goods to the lawful owner after the customs inspection has been com-

pleted. Since it (U. S.) voluntarily undertook a bailment of the goods in question, a promise on its part to use due care during the term of the bailment can and should be implied."

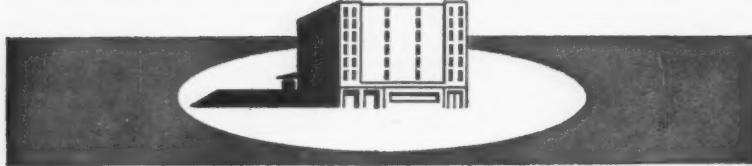
#### If a bailee receives any consideration for storing merchandise must he safeguard the goods?

Modern courts hold that if a bailee, as a warehouseman, receives any "consideration" for storing or keeping merchandise, he must exercise at least "ordinary" care to safeguard the goods. This is so because under these circumstances the storeroom of the goods is not a gratuitous bailee.

For instance, in *W—v. L—G—J—* 668, the testimony showed that a bailee without compensation accepted money from a bailor and promised to deliver it to a certain person. But he failed to do so. Thereafter, he suffered an unfavorable verdict in an action of special assumpsit. A motion in arrest of judgment on the ground that there was no consideration was denied. In other words, the bailee did not agree to keep the money for accommodation of its owner but he promised to deliver it to another person.

The bailee failed to keep his promise. In a later suit the higher court held that the bailee must repay the money to its owner.

# Warehouse SPOTLIGHT



## TRRF Elevates Prescott, Howard; Elects Three to Executive Comm.

At its Annual Meeting, the Board of Governors of The Refrigeration Research Foundation elected Dr. Samuel C. Prescott to the newly-created position of honorary chairman of the Board.

Prescott is emeritus dean of science at Massachusetts Institute of Technology. Dr. Louis B. Howard, dean of the College of Agriculture and director of the Experiment Station, University of Illinois, was elected chairman of the Board.

The new members of the Executive Committee are A. R. Carstensen, president, Crystal Ice and Cold Storage Co., Sacramento, Calif.; A. W. Oakley, Jr., Hudson Refrigerating Co., Jersey City, N. J.; and D. H. Sanders, vice president, Omaha, Neb.

—DA—

## PMTA Acts for Minimum Rate

At a recent meeting of the Pennsylvania Motor Truck Association's Movers and Warehousemen's Conference, action was taken on investigation of the possibilities of setting up a minimum rate order for intrastate movement of household goods up to 40 miles. Resolution urging Pennsylvania's legislature to legalize 40-ft semi-trailer length operation was approved unanimously.

## SBA to Honor Loan Applications By Interstate Van Line Agents

The Small Business Administration has announced that it will not deny a business loan to any small household goods mover solely because of its relationship with an interstate van line.

Applicant's annual receipts, however, must not have exceeded \$3,000,000 during the company's last fiscal year. Household goods movers, freight forwarders, booking and hauling agents, and similar enterprises must list the amount of their annual receipts which are attributable directly to a relationship with an interstate van line.

## NARW Officers



New officers of the National Association of Refrigerated Warehouses are pictured at the group's recent convention. They are (left to right) A. R. Carstensen, president and general manager, Crystal Ice and Cold Storage Co., Sacramento, Calif.; president; Garth A. Shoemaker, executive vice president and treasurer, Hygeia Refrigerating Co., Elmira, N. Y., vice president; and William L. Baker, vice president and general manager, Seattle Ice and Cold Storage Co., Seattle, Wash., treasurer.

## Men in the Spotlight

James D. Edgett—re-elected president, North American Van Lines, Inc., Fort Wayne, Ind.; Jack E. Schang—manager of sales administration.



Perry Maschino (left)—Eugene Land (center)—moved up as assistant operations managers, Aero Mayflower Transit Co., Inc., Indianapolis, Ind.; Howard Jackson—general traffic manager. All part of new reorganization of operations department. John Burnside Smith—Maurice Cameron—C. M. Kelley—and Frank E. Harris—new vice presidents. Collier F. Hendricks—rejoins company as manager of the southeastern district.

Ralph W. Pratt—named International Mayflower Warehouseman of the Year. He runs Pratt-Mayflower warehouse in Pullman, Wash.

George Orlowski—appointed eastern sales manager, Associated Warehouses, Inc., Chicago, Ill.

**Madison F. Whitehead**—named executive vice president, Lehigh Warehouse and Transportation Company of Newark, N. J.

Philip Blackwell—new national dispatch coordinator, National Van Lines, Inc., Broadview, Ill.

William C. Shaw—appointed general sales manager, U. S. Van Lines, Inc., South Bend, Ind.

John F. Murray—named manager, Vogel Van and Storage, Pittsfield, Mass.

Thomas G. Newman—Container Transport International president in Europe and Near East for three-month tour of CTI offices and Federation of International Furniture Removers Association Convention.

Robert W. Dowling—elected chairman of the Board, International Terminal and Warehouse Co., which will construct, operate, and manage private terminal and storage facilities in foreign countries.

Richard F. Cadorette—named general traffic manager, Richard L. Tarnow—regional traffic manager, North American Van Lines, Inc.; J. J. McTeague—vice president; C. J. O'Brien—vice president.

Richard E. Oehser—appointed operations manager, Atlas Van-Lines, Inc., Evansville, Ind.

Morris Perigo—presented with his 12th Safe Driver Award by Lyon Van Lines, Inc.

## Allied Annual Meeting July 21

Approximately 500 agents and employes of Allied Van Lines, Inc., will gather at the Greenbriar Hotel, White Sulphur Springs, Va., July 21-23. Stockholder matters, business sessions, and reports will fill the three-day convention.

—DA—

## Senate Committee Probes Govt. Operation of Refrigerated Whses.

The Senate Small Business Committee is probing the Defense Department's decision to operate its own refrigerated warehouses in competition with private industry.

A one-day hearing was held recently on the 1957 reactivation of the Navy's refrigeration facilities at Cheatham Annex, Williamsburg, Va. It is expected that as a result of the hearing the subcommittee will issue a report contending that the government should get out of competition with private business where private firms can do the job efficiently. This helps build the country's defense capacity and keeps small firms in sound financial condition, the report will contend.

Witnesses complained that the once-mothballed facility was reopened although commercial freezer space was not fully occupied. Loss of business to the Cheatham Annex by commercial firms has been about \$1,000,000 a year and loss of jobs is reputed to be in the thousands. Army witnesses said that differences in cost to the government "was an important factor," saving the government about \$600,000 a year compared to commercial facilities.

—DA—

## Three Warehouses for West

In an effort to maintain facilities in line with the expanding moving industry in the west, Bekins Worldwide Moving and Storage System has opened new warehouses in Palo Alto and Walnut Creek, Calif., and Dallas, Texas. The new facilities are especially planned to handle the requirements of the electronic industry.

## Pratt Named Warehouseman of Year



Ralph W. Pratt (center) was named International Mayflower Warehouseman of the Year recently. He is shown surrounded by moving company officials honored as District Warehousemen of the Year. Pratt is owner of Pratt-Mayflower, Pullman, Wash. Cited for outstanding achievement in their districts were (left to right) Jack C. Robbins, Buehler Transfer Co., Denver; Frank P. Finnegan, Finnegan's Warehouse Corp., Newburgh, N. Y.; Allen E. Carter, Carter's Moving and Storage, Urbana, Ill.; Charles W. Mattox, El Paso Moving and Storage Co., El Paso, Tex.; Harold E. Williams, Reliable Transfer, Uniontown, Pa.; Claude W. Joiner, Joiner's Van and Storage Service, Orlando, Fla.; W. C. Brown, Jr., Allender-Brown Co., Lexington, Ky., and J. Lowell McAdam, Calmay Van Lines, Los Angeles

## Warehouse Briefs

The executive vice president of Bekins Van Lines, Lucien Shaw, recently returned from a tour of the Orient to develop standardized overseas techniques for corporate moves and review his company's overseas operations.

For the sixth consecutive year, Joyce Brothers Storage and Van Co., Chicago, gathered the largest volume in 1959 with a total gross of \$72,650,000—20 per cent above 1958.

United Van Lines has won the second place award for the best over-all advertising program in the Annual Contest sponsored by the Customer Relations Council, American Trucking Associations, Inc.

A new private line teletypewriter system connecting Allied Van Lines, Inc.'s offices in Euless, Texas; Chamblee, Ga.; Secaucus, N. J.; and Broadview, Ill., is now complete. Allied will hold 20 workshop seminars during 1960. New agents include Alexander's Van and Storage, Inc., Santa Rosa, Calif., and D. Chapman and Co., Ltd., Kelowna, B. C., Canada. New branches were approved for Decatur Transfer and Storage, Inc., Sheffield, Ala., and Farley Brothers Moving and Storage, Inc., Palmdale, Calif.

The new world-wide moving terminal of North American Van Lines, Inc., was opened recently in the Port of New Orleans' public commodity warehouse area.

Aero Mayflower Transit Co., Inc., has named Siegmund's Moving, Packing, and Storage as its Santurce, Puerto Rico, agent. Other appointments include Tyler Moving and Storage Co., Rapid City, S. D.; Portland Van and Storage Co., Inc., Portland, Maine; Arkansas Van Lines, Blytheville, Ark.; and George W. Clowser Transfer, Winchester, Va.

An office in Johnson City, N. Y., under the supervision of John Galloway was opened recently by United Van Lines.

A \$2 million portion of Walter P. Chrysler's art collection was moved recently by North American Van Lines, Inc., from Dayton, Ohio to New York.

Twelve new agents are in the news at Atlas Van Lines, Inc.: Admiral Van and Storage Co., Dothan, Ala.; Beard Movers and Storage Co., Atlanta, Ga.; Beaver Van Lines, Inc., Chicago; Bee's Van and Storage, Santa Maria, Calif.; Berger Transfer and Storage, Inc., Duluth, Minn.; Central Storage and Transfer Co., Inc., Shreveport, La. Also Combs Cartage Co., Lubbock, Texas; Fox Transfer and Storage, Harmarville, Pa.; Golden Van Lines, Inc., Longmont, Colo.; Moss Transfer and Storage, North Hollywood, Calif.; Pace Moving and Storage, Bell, Calif.; and V. Santini, Inc., New York, N. Y. The Evansville, Ind., world-wide headquarters building is now in full operation.

The National Association of Refrigerated Warehouses has just released the results of its 1959 Safety Survey—while frequency and severity rates increased the overall record is good.

The furniture and household goods of three families of roving oil exploration engineers from Atlantic Refining Co.'s exploration division were shipped to the Canary Islands by Pan American World Airways in Van Paaks, recently.

A new leasing organization is operating in Washington, D. C., and offers commercial warehousing, local hauling, and distribution. Company name is Capital Leasing Unlimited, Inc.

# Warehouse Directory

Listed below are approximately 300 public warehouses whose services are advertised in this issue of DISTRIBUTION AGE. The listing is alphabetical by city and state. Included are general merchandise warehouses, refrigerated warehouses, and household goods warehouses. Also listed are a number of national warehouse sales organizations.

Additional information on the services and facilities of particular warehouses shown in the listing can be obtained by turning to the advertisements on the following pages. Generally the advertisements appear in the same geographical, alphabetical sequence as the listings below. Still more information can be had by writing directly to the warehouse.

## ALABAMA

Birmingham  
Doe's Tfr. & Warehouse, Inc.  
Harris Warehouse Co.  
Strickland Tfr. & Whse. Co.

## ARIZONA

Phoenix  
B-Z-Bee Transp'n. & Whse. Co.  
Lightning Mvg. & Whse.

## ARKANSAS

Little Rock  
Terminal Warehouse Co.

## CALIFORNIA

Los Angeles  
Bekins Warehousing Corp.  
California Cartage Warehouse  
Central Term. Whse. Co.  
Davies Warehouse Co.  
Overland Term. Warehouse Co.  
Pacific Coast Term. Whse. Co.  
Pacific Commercial Whse., Inc.  
Star Truck & Whse. Co.  
Union Terminal Warehouse

## San Francisco

San Francisco Whse. Co.

## COLORADO

Colorado Springs  
Welcker Tfr. & Stge. Co.

## CONNECTICUT

Bridgeport  
William B. Meyer, Inc.  
Hartford

## DELAWARE

Dover  
Delmarva Whses., Inc.

## DISTRICT OF COLUMBIA

Washington  
Davidson Tfr. & Storage Co.  
Kane Warehouse Company  
Terminal Stge. Co. of Wash.

## FLORIDA

Jacksonville  
Jacksonville Warehouse Co.  
Laney & Duke Stge. Whse. Co., Inc.  
M & M Term'l. Whse. Company  
Peninsular Whse. Company  
Union Terminal Whse. Co.

## Miami

Colonial Warehouse, Inc.  
International Bonded Whse. Corp.

## Tampa

Caldwell-Neal

## GEORGIA

Atlanta  
American Bonded Whse.  
Savannah  
Savannah Bonded Whse. & Tfr. Co.

## HAWAII

Honolulu  
H C & D Mvg. & Stge.

## ILLINOIS

Cairo  
Hudson Warehouses

Chicago  
Ace Warehousing Service  
Affiliated Whse. Companies  
American Chain of Whses., Inc.  
Anchor Storage Co.  
Associated Warehouses, Inc.  
Crooks Terminal Whses., Inc.  
Equipment Storage Corp.  
Griswold & Bateman Whse. Co.  
Grove Storage Co., Inc.  
Joyce Bros. Stge. & Van Co.  
Majestic Whses., Inc.  
Midland Warehouses, Inc.  
North Pier Terminal  
Packer's Term'l. & Whse. Corp.  
Producers Warehouse Co.  
Riverside Warehouse  
Soo Terminal Whse.  
Sykes Terminal Whse. Co.  
Thomson Terminals, Inc.  
Wakem & McLaughlin, Inc.  
Western Warehousing Co.

Chicago Heights  
United Warehousing Co.

East St. Louis  
McMahon Transfer & Whse. Co.  
Mid-America Trml. Whse., Inc.  
C. J. Nooney & Co.

Joliet  
Joliet Whse. & Tfr. Co.

Kankakee  
Belt Route Whse. Stge. Co.

Peoria  
United Whsing. Facilities, Inc.

Vandalia  
Vandalia Whse. Corp.

## INDIANA

Elkhart  
Schult General Warehouse

Evansville  
Ingle Street Warehouse Co.  
Mead Johnson Terminal Corp.  
Producer's, Inc.  
Terminal Warehouse, Inc.

Fort Wayne  
Edgar's Warehouses  
Fort Wayne Storage Co., Inc.  
Pettit Whses., Inc.

Hammond  
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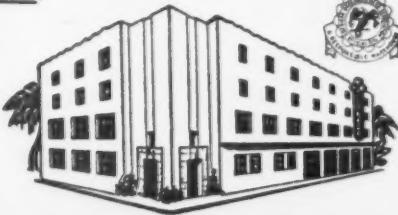
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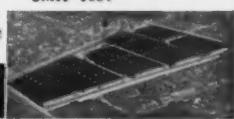
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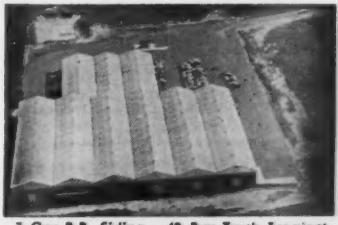
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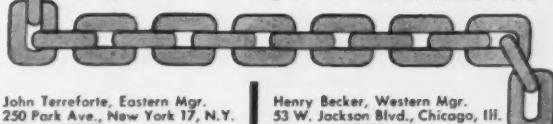
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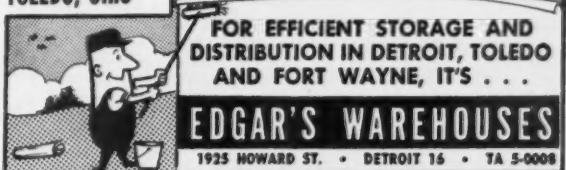
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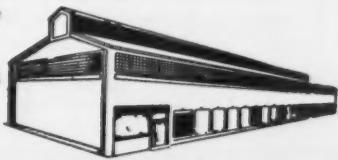
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WAREHOUSE STOCK and POOL CAR DISTRIBUTION  
Automatic Sprinkler System—Centrally Located

and Firms are Arranged Alphabetically

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merchandise & commercial  
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328,000 sq. ft. Fireproof construction,  
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**Warehouse  
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Transload  
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Serving SPOKANE and the INLAND EMPIRE

**4 CENTRALLY LOCATED WAREHOUSES WITH COMPLETE WAREHOUSING, DISTRIBUTION AND TRUCKING SERVICE**

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Phone: RI 8063 TWX SP 17  
Member Firm  
**PACIFIC NATIONAL WAREHOUSES, INC.**  
ONE coordinated warehousing and pool-car distribution service

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**WAREHOUSING • DISTRIBUTION • TRUCKING**

Represented By  
DISTRIBUTION SERVICE, INC.  
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#### LEICHT TRANSFER & STORAGE CO.

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Merchandise Storage  
Pool Car Distribution  
Transit Storage  
Household Goods Storage  
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U. S. Customs, State and  
Public Bonded  
70 Car Track Capacity  
Modern Handling Equipment  
Private Siding on C&NW  
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Reciprocal Switching all  
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Complete local and over-the-road truck services  
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OF MADISON, INC.

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Deep Water Dock, Private Siding  
on C.M.S.I.P. & P.R.R.

and Firms are Arranged Alphabetically

**HANSEN  
STORAGE CO.**  
124 N. JEFFERSON ST.  
MILWAUKEE, WIS.  
WISCONSIN'S  
LARGEST AND  
MOST MODERN  
AFFILIATE — HANSEN STORAGE OF MADISON INC.

### National Warehouse Corp.



A SOLID BLOCK OF  
RESPONSIBLE WAREHOUSING

ALSO LEASE RENTALS OF  
WHOLE BLDGS. OR PARTS  
SO. WATER & E. BRUCE STREETS

### Cards Pick Cartons...

(Continued from Page 55)

the bottom of each of the decks.

Cards need not be sorted. The card reader will receive cards in any sequence. Their information is momentarily stored in a memory circuit, then discharged in the proper sequence. This directs the main system to discharge its cartons in a pre-established sequence which avoids pile-ups and traffic jams. From the time the cards are placed in the card reader, the operation is automatic. The "end-of-order" card ends the sequence. By means of a set of test cards, the order picking system can test its own electrical system, an important maintenance feature.

Heart of the system is a giant live-storage rack containing the 72 most active items. Gravity conveyor lanes are arranged in three decks of 24 lanes each. Cartons are automatically discharged onto one of three moving conveyor belts that traverse the face of the rack at the three different levels. At the

end of the three belts are deflectors which are set either "right" or "left." Thus, each belt empties alternately into one of two conveyor lanes to accumulate an order. This permits picking a second order while the first is being processed.

All conveyor lanes merge into a single-lane conveyor, which then distributes orders to one of six branch-line conveyors leading to the truck dock. The coded tote box, which leads cartons of each order, automatically directs the deflectors. At the truck-dock end of the six conveyors are telescoping live wheel conveyor sections to facilitate truck loading.

Unusually flexible, the system handles a wide variety of carton sizes ranging from 5 x 7 x 6 in. to 18 x 18 x 8 in. Normal changes in package sizes can be accommodated without modifying any of the handling equipment. Because of fast changing packaging and merchandising needs, this flexibil-

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Established 1913

TORONTO'S LARGEST

Merchandise Storage and Distribution Specialists



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Telephone: EMpire 4-0111

Member of Canadian Warehousemen's Association

Represented by Allied Distribution, Inc.—Chicago, Ill., & New York, N. Y.

### TORONTO, ONTARIO TERMINAL WAREHOUSES LIMITED

1,000,000 Square Feet  
Refrigerated Storage  
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Merchandise Storage  
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Cartage

Free Switching  
Lowest Insurance

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### TORONTO, ONT.

ENQUIRIES INVITED

**TORONTO STORAGE CO. LIMITED**

(Established 1916)

2/16 Berkeley St. Toronto 2, Ont.  
General Merchandise—Bonded & Free  
1,500,000 cubic feet. Sprinklered.  
Private Siding. Efficient Loading Facilities.  
Company Owned Trucks.  
Members of Canadian Warehousemen's Association.  
"Our Clients do the selling—we do the rest."

### MONTREAL, QUE.

**ST.LAWRENCE WAREHOUSE INC.**

8-VAN HORNE AVENUE, MONTREAL, CANADA  
200,000 SQ FT. OF MODERN FIREPROOF SPACE LOCATED  
IN THE EXACT CENTER OF THE CITY OF MONTREAL  
Canadian Customs Bonded. Private Siding — 8 Car  
Capacity — Free Switching — All Railroad Connections  
Represented by  
**ALLIED DISTRIBUTION, INC.**  
CHICAGO, ILL. NEW YORK, N. Y.

ity is an extremely important factor.

#### Coordination with Hand-Picking

"Slower moving" and "very slow" items are stored in live-storage racks and shelves, respectively. Manual and automatic procedures are coordinated as follows:

The operator receives punched cards for automatic items and printed orders for hand-picked items, along with the number of the assigned truck dock. He selects a tote box coded for the designated truck dock and places it on the "right" or "left" conveyor, as indicated by a signal light. Then he puts the punched cards in the reader. At the same time he places the hand-picked items on the conveyor behind the lead tote box. From that point on, the procedure is automatic. Cartons are stenciled with names and addresses as they proceed toward the dock.

Company officials herald the Kansas City order-picking system as an important step forward. It forecasts mechanization of all their distribution. •

(Resume Reading on Page 56)

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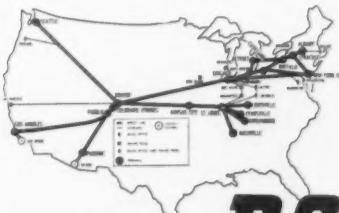
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**nearest you for**  
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**PERFECT SHIPPING**

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Denver, Colorado	DU 8-4567
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Kansas City, Missouri	HU 3-9343
Los Angeles, California	AN 8-8211
Louisville, Kentucky	ME 6-1361
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Owensboro, Kentucky	MU 3-5363
Phoenix, Arizona	AL 8-5321
Pueblo, Colorado	LI 3-4425
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**TRUCKING CO., Inc.**

**The Only Direct Coast-to-Coast Carrier**

**D-C**



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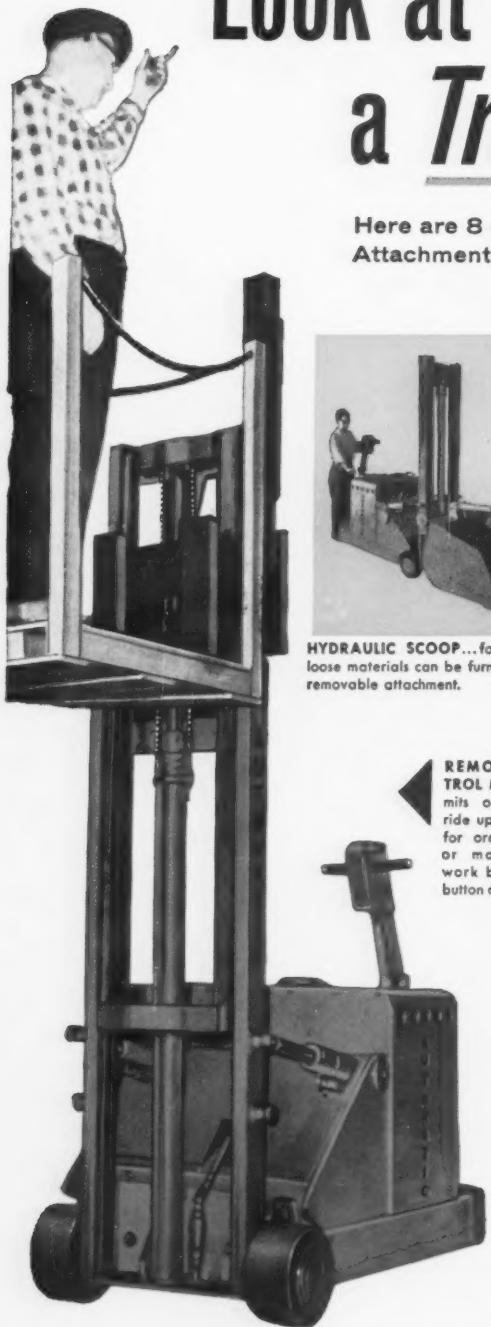
**Perfect shipping begins with proper loading.** That's why we photograph your shipment before it leaves for its destination. A photographic record assures you, that from the very beginning, your shipment gets the careful attention it deserves while in our hands. Photos keep us on the alert . . . and study of them has helped us develop new and better handling and loading techniques. Here is just one example of the careful attention to detail that has earned for D-C an outstanding record for claim-free shipments. For the PERFECT SHIPPING you want, specify D-C—the Dependable Carrier!



DENVER CHICAGO  
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THE ONLY DIRECT COAST-TO-COAST CARRIER



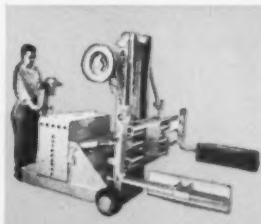
# Look at all these things a *Transporter* can do!

Here are 8 cost-cutting ways Automatic's Standard Attachments can turn Transporters into Specialists

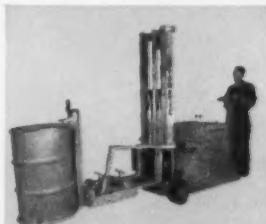
These specially designed standard attachments can add job flexibility to your Transporter Stacker. Now, a variety of jobs can be performed at considerable cost savings.



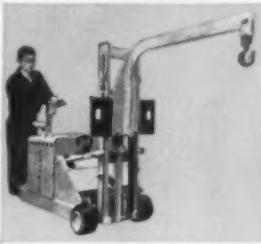
**HYDRAULIC SCOOP**...for handling loose materials can be furnished as a removable attachment.



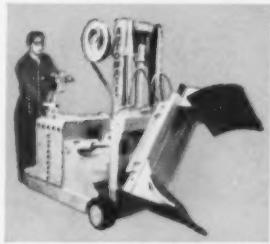
**UTILITY CLAMPING DEVICE**...Clamp arms can be attached to forks for handling cartons, etc. Clamp arms can be removed to handle pallets.



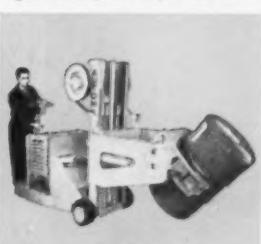
**MECHANICAL GRAVITY DRUM DUMPER**...Removable attachment to fit on forks.



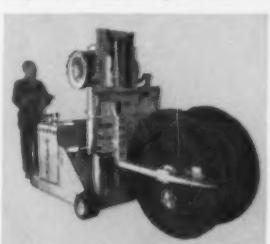
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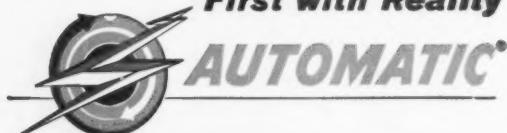
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**First with Reality**



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